



## **Knowledge Sharing Among Academics in Selected Universities in Tanzania**

By

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March, 2017

## DECLARATION

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**Professor Stephen Mutula**

## **ABSTRACT**

Higher learning Education sector in Tanzania is increasingly becoming competitive following its liberalization in the year 1995. The universities are therefore being compelled to invest and adopt new and powerful strategic tools to promote the academic enterprise in a way that will preserve the competitive advantages that the institutions have hitherto enjoyed in a monopolistic environment.

The importance of harnessing the knowledge asset to enhance competitiveness in Tanzanian universities is now imperative considering the fact that a number of information and knowledge systems in these institutions are disparate making knowledge sharing difficult. Knowledge sharing in Tanzania is evidently low because of limited KM infrastructure, lack of awareness about the importance of knowledge sharing, limited skills and inadequate funds to build knowledge sharing infrastructure in the form of databases, intranets, portals, Web 2.0 and websites to mention but a few.

This study investigated the status of knowledge sharing in universities in Tanzania with a view to proffering recommendations that would help the universities to effectively manage knowledge assets and enhance competitive advantage in an increasingly globalised and competitive higher education environment.

The study sought to address the following research questions: How does organisational culture promote or hinder knowledge sharing among academics in the universities in Tanzania? To what extent do universities in Tanzania support knowledge creation and sharing among academics? What knowledge sharing strategies exist in the universities? How are the academics leveraging knowledge assets in their core functions of teaching, research and consultancy? What is the attitude of academics towards knowledge sharing? What factors influence knowledge sharing among academics in Tanzanian universities?

The study was underpinned by the knowledge sharing model. The study adopted a post positivist paradigm with survey research design. A mixed method approach was used focusing on academics, librarians and deans of faculties. Data was collected using survey questionnaire and interview schedule. The quantitative data collected was analyzed using

Statistical Package for Social Sciences (SPSS) to produce descriptive statistics. Similarly, the qualitative data was analyzed thematically and presented through narration.

The findings revealed that universities in Tanzania generally promoted a culture of knowledge sharing among academics through among other ways: seminal presentations, publications, public lectures, conferences and colloquia. The findings further showed that the universities did not have formal organisation structures and policies for promoting knowledge sharing. Attempts were however being made by the universities through the directorates of research to promote knowledge sharing. The respondents were of the view that a dedicated unit for coordinating and managing knowledge sharing as well as dedicated staff was required. The findings identified funding, enabling knowledge sharing strategies, incentives and rewards as some of the critical success factors that would promote a culture of knowledge sharing among academics. The findings further revealed that the academics leveraged knowledge assets mostly for teaching and research purposes, and to a lesser extent for consultancy. The findings revealed that the academics had a positive attitude towards knowledge sharing in spite of limited cases of knowledge hoarding that were reported.

The study proposes that enabling knowledge management policies, capacity building strategies, ICT infrastructure development, incentives and awareness help cultivate a culture of knowledge sharing among academics in universities in Tanzania.

The study findings indicated that the academics are aware of knowledge management and knowledge sharing, they participated in knowledge sharing activities in the universities though the universities are facing challenges such as funds, knowledge sharing policies which hinder them to share knowledge effectively.

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***“I can do all things through Christ...” Philippians 4:13***

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## DEDICATION

I dedicate this work to the Lord God Almighty.

*“What shall I render unto the Lord for all his benefits toward me”?* Psalm 116:12

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## LIST OF ABBREVIATIONS

AGORA	Access to Global Online Research in Agriculture
ASHER	Australian Scheme for Higher Education Repositories
CEO	Chief Executive Officer
CoP	Communities of Practice
COTUL	Consortium of Tanzania Universities and Research Libraries
CUHAS	Catholic University of Health and Allied Sciences
CUUL	Consortium of Uganda University libraries
DOAJ	Directory of Open Access Journals
DVCAA	Deputy Vice Chancellor for Academic affairs
HINARI	Health Inter Network Access to Research initiative
ICT	Information Communication Technology
IIUM	International Islamic University Malaysia
IR	Institutional Repositories
IT	Information Technology
JAIST	Japan Advanced Institute of Science and Technology
JSTOR	Journal Storage
KLIS	Kenya Library and Information Services Consortium
KM	Knowledge Management
KMP	Knowledge Management Policy
KS	Knowledge Sharing
LAN	Local Area Networks
MENA	Middle East and North Africa
MUHAS	Muhimbili University of Health and Allied Sciences
MU	Mzumbe University
OECD	Organisation for Economic Co-operation and Development
OKCT	Organisation Knowledge Creation Theory
OPAC	Online Public Access Catalogue
OPRAS	Open Performance Review and Appraisals
OUP	Oxford University Press
QARE	Online Access to Research in the Environment

SANLiC	South Africa National Library and Information Consortium
SAUT	St Augustine University of Tanzania
SCT	Social Capital Theory
SECI	Socialization, Externalization, Combination and Internalization
SET	Social Exchange Theory
SME	Small and Medium-sized Enterprises
SPSS	Statistical Package for the Social Sciences
SUA	Sokoine University of Agriculture
TaCCIRe	Tanzania Climate Change Information Repository
TCU	Tanzania Commission for the Universities
TEEAL	The Essential Electronic Agricultural Library
TI	Technology Infrastructure
TMA	Tanzania Meteorological Agency
TV	Television
UoI	University of Iringa
UDSM	University of Dar Es Salaam
UK	United Kingdom
UKB	Universiteitsbibliotheken & Koninklijk Bibliotheek (Netherlands)
UKZN	University of KwaZulu-Natal
UMER	The University of Melbourne ePrints Repository
UNESCO	The United Nations Educational, Scientific and Cultural Organisation
UNFPA	United Nations Population Fund
USA	United States of America
UTAUT	Unified Theory of Acceptance and Use of Technology
UTM	University Technology of Malaysia

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Background to the Study**

The concept of Knowledge Sharing (KS) refers to the exchange of knowledge between two or more parties such as individuals, organisations or parts of an organisation. In this regard, Bulan and Sensuse (2012) define Knowledge Sharing as a process whereby tacit or explicit knowledge is exchanged and communicated to other individuals. In this exchange, one party communicates knowledge and the other assimilates it and vice versa (Jacobson, 2006:507). Through Knowledge Sharing individuals, organisations or parts of organisations interact, share knowledge and finally create a new knowledge. Knowledge Sharing is part of the broader field of Knowledge Management (KM) encompassing how organisations create, process, retain, share and make the best use of knowledge (Uriarte, 2008). Sharma, Singh and Neha (2012) assert that Knowledge Sharing is the foundation stone of Knowledge Management. If knowledge is not shared, then it is meaningless to manage knowledge. Through knowledge sharing organisations are able to enhance and sustain organisational performance (Ochara, Sewchurran, Ndlovu, & Pillay, 2008).

The growing field of Knowledge Management (KM) in general and evolution of knowledge sharing in particular came as a result of the work of American theorists and practitioners such as Peter Drucker in 1964; he was the first to coin the phrase “knowledge worker” and Peter Senge in 1990 focused on the learning organisation. Since then Takeuchi and Nonaka (2002) assert that around the world especially in North and South America companies have increasingly got involved in knowledge exchange. Rivard and Smith (2007) reveal that knowledge management has led to a general recognition among North American academics and business people, that knowledge is an important organisational asset. Davenport and Prusak (1997) outline knowledge management functions as creation of knowledge repositories, increasing knowledge access and use, improving the knowledge environment and management of knowledge as an university asset. In Latin America, for example Calderon-Moncloa, (2007:179) found that knowledge sharing was recognised as a key aspect of business competitiveness. However, Spek and Carter (2003) in the context of Europe found that companies were involved in promoting good practices in Knowledge Management

though they were in part hampered by a number of factors. One of the factors in particular that the study found out was the changing culture of the firm which was the most difficult aspect of fostering knowledge management practices. Moreover, companies perceived knowledge management initiatives aimed at enhancing competitiveness as additional workload to employees. Furthermore, initiatives to promote knowledge management in general and knowledge sharing in particular were hampered by staff turnover (Spek & Carter, 2003) which led to knowledge erosion. The lack of leadership and managerial direction in terms of clear decision making and management support also affected negatively, knowledge management and sharing practices in organisations. Top management support in creation, sharing and use of knowledge was found critical in promoting knowledge sharing within organisations. Such top management support should be anchored on knowledge strategy and policy.

In India, Ardichvili (2006) established that knowledge management practice (including knowledge sharing) was hampered by cultural and technology barriers. In this respect Best and Kakkar (2007) found out that India has varied cultural heritage which is considered as one of the most diverse in the world. The cultural diversity of the Indian nation is based on various dimensions including but not limited to religion, caste, language and region. Because of cultural diversities people fail to interact with others to share knowledge freely. For example the language affects communication and makes it difficult to communicate and share knowledge. Moreover, bringing together teams of people with substantial cultural differences is a big challenge (Best & Kakkar, 2007). In this regard, firms find it difficult to combine strategic goals, people and corporate culture to enhance knowledge sharing. For these reasons Best and Kakkar (2007) advised that, promoting knowledge sharing in India needed to be balanced, by changing the firms' culture and eliminating cultural differences.

In the context of Africa, and within university environments, Mchombu (2006) points out that, KM is hardly practiced and as a result these institutions are at a disadvantage in the knowledge economy. Similarly, Maponya (2004) notes that though academic libraries in Africa may have a suitable environment for KM practices, they have not effectively adopted KM culture. This is exacerbated by the fact that the libraries lack technology, KM policy, leadership and strategies. The study of Masoti and Masheka (2010) in Kenya found that knowledge sharing in organisations was not maximized because culture, leadership and strategy were ignored.

In Tanzania, Lwoga and Chilimo (2008) are of the view that there is growing attempt to institutionalize knowledge management in Universities because these institutions now realize that knowledge sharing among universities is vital for competing in globalised academic environment characterised by liberalization of the education enterprise. Moreover, the demand for higher learning in Tanzania is reportedly increasing geometrically year after year (Msolla, n.d.). Currently Tanzania has 33 full fledged universities of which 12 are public and 21 are private (TCU, 2016). Thus compelling universities to invest and adopt new and powerful strategic tools to promote the academic enterprise in a way that will preserve the competitive advantages of these institutions which hitherto have enjoyed in a monopolistic higher education environment.

In addition, the importance of harnessing the knowledge assets to enhance competitiveness in Tanzanian universities is given impetus because of the fact that a number of information and knowledge systems in these institutions are not integrated making knowledge sharing difficult (Masele, 2008). Similarly, Mushi (2009) avers that though knowledge management practice is growing in Tanzanian universities, knowledge sharing is evidently low due to limited use of communication, information technologies; and inadequate funds to leverage knowledge sharing infrastructure in the form of databases, intranets, portals, and Web 2.0 tools among others. In this regard Mavodza (2010) recommended the use of Web 2.0 in university libraries in Tanzania to enhance knowledge sharing.

Katambara (2014) asserts that higher education in Tanzania is faced with great financial difficulties to the extent that knowledge sharing in particular and knowledge management in general are being hampered. The importance of knowledge sharing to promote academic enterprise cannot be over emphasized. The United Nations Educational, Scientific and Cultural Organisation (UNESCO) article 15 of higher education emphasizes the importance of knowledge sharing in higher education institutions across borders and continents. UNESCO insists that academics exchange programmes and institutional collaboration to promote intellectual co-operation in all higher education systems (UNESCO, 1998). Alotaibi, Crowder and Wills (2012) noted that knowledge sharing in higher education in Tanzania is hampered by cultural, technology, and educational factors.

Consequently the knowledge assets in the institutions are not being effectively disseminated and used (Keyes, 2008). Lwoga and Sife (2006) pointed out that many university libraries in developing countries including Tanzania do not have systematic approach of managing knowledge to support the core functions of research, teaching and learning. Consequently, Bulan and Sensuse (2012) assert that they are prone to losing their knowledge assets when staffs leave the organisation without their knowledge being captured. This problem is compounded by the fact that staff have a tendency to hoard information thus, hindering knowledge sharing (Mchombu, 2006). The consequences of barriers to knowledge management and sharing include: loss of competitive advantage, lack of innovation by organisations, reduced creation of new knowledge and failure to tap tacit knowledge which resides in people's heads.

Developing knowledge sharing ethos in universities and other organisations is therefore imperative and requires organisations to create an enabling environment to ensure knowledge sharing happens. In particular, Knowledge management enablers such as top management commitment, management support KM policy and Technological infrastructure (TI), all provide a stronger base to knowledge management. Technology enables collecting, defining, storing, indexing and linking data from various places. Recast

Singh and Kant (2008) emphasise an organisational structure that reveal the positions and responsibilities of every employee, relationship in staff responsibilities and organisational culture which considers collaboration and trust. Alawi, Marzooq, and Mohammed (2007) note that trust fosters the relationship between individuals and groups; thereby, facilitating a more proactive and open knowledge sharing culture. Joshi, Parmer and Chandrawat (2012) added that, aspects that must be addressed to enhance knowledge sharing in organisations include: putting in place motivation, reward and recognition systems to encourage people to create, share, and use knowledge (Kant & Singh, 2008; Valmohammadi, 2010); succession planning to ensure knowledge transfer and replacement of retiring staff; creating awareness about the value of knowledge sharing among staff; making knowledge sharing in an organisation more practical to solve business problems (McDermott & O'Dell, 2001); capacity building and involving staff in developing knowledge sharing strategies.

This study is therefore aimed at investigating the status of knowledge sharing among academics in universities in Tanzania with a view to proffering recommendations that would

help universities to effectively manage their knowledge assets in order to enhance their competitive advantage in a highly competitive globalised higher education environment. The study covered four universities namely; St Augustine university of Tanzania, Sokoine University of Agriculture, Mzumbe university and University of Iringa

## **1.2 Statement of the Problem**

Universities the world over play an important role in socio-economic development through knowledge production and sharing (Msolla, n.d.). Besides, knowledge production and sharing are powerful strategic tools for enhancing an organisation's business and competitive advantage (UNESCO, 1998). Aslam *et al* (2013), (Doud and Abdul 2006 as cited in Zwain, Teong, and Othman, 2012) are of the view that academic performance in the university depends on knowledge sharing. Masele (2008) therefore advocates for the capture and prevention of the loss of critical knowledge in the universities and other public sector organisations that may be occasioned by retirement, downsizing and out sourcing.

Despite the importance of knowledge production and sharing in socio-economic development and in promoting the business and competitive advantage of organisations, most universities especially in developing countries lack the requisite infrastructures for knowledge management. The Iraqi-HEOC (2007) for example revealed that Iraqi universities did not have in place knowledge sharing strategies to improve academic competence as they lacked important policy frameworks, infrastructures and skills to leverage knowledge assets.

Mutula and Jacobs (2012) in the context of higher education in South Africa identified lack of integration of information and knowledge management systems as part of the challenges hampering knowledge sharing in the institutions. Keyes (2008) opines that existing knowledge in public sector organisations in the developing world is not being effectively disseminated and used due to cultural, technology, and educational constraints. Masoti and Masheka (2010) in a KMP management consultancy report released in Nairobi Kenya noted that public sector organisations in the region do not maximize the use of knowledge assets because culture, leadership and strategy for knowledge sharing are ignored.

In Tanzania, the demand for higher learning is geometrically increasing year after year (Msolla, n.d.), exacerbating challenges of: high cost of journal subscription against dwindling collection development budget; the depreciation of the local currency against the US dollar; limited ICT infrastructure and increasing enrolment. Besides, disparate

information systems are hampering effective communication and knowledge sharing (Mushi, 2009; Katambara, 2014). Mavodza (2010) therefore advocates for universities in Tanzania to find innovative ways such as using Web 2.0 for sharing knowledge in order to achieve quality in teaching and research.

Lwoga and Sife (2006) point out that universities in Tanzania do not have systematic approach of managing knowledge to support their core function of teaching, research and engagement. Bulan and Sensuse (2012) in this regard decry the lack of knowledge capturing and retention strategies from staff leaving the universities leading to loss of such knowledge (Lehaney, 2004:7). This problem is compounded according to Mchombu (2006) by the fact that staff have a tendency to hide information thus hindering knowledge sharing. Despite the literature identifying the challenges affecting knowledge sharing in public sector organisations, there exists no study in the context of Universities in Tanzania to determine how such challenges affect knowledge sharing and the impact it has on teaching, research and engagement. For this reason, this study investigates knowledge sharing among academics in universities in Tanzania with a view to proffering, practical interventions to enable the universities leverage knowledge assets to enhance their competitiveness locally and globally.

### **1.3 Objectives of the Study**

The main objective of the study is to investigate knowledge sharing among academics in selected universities in Tanzania. The specific objectives of the study were:

- 1.3.1 To investigate how organisation culture promotes or hinders knowledge sharing among academics in the universities.
- 1.3.2 To assess the extent to which universities in Tanzania are supporting knowledge sharing among academics.
- 1.3.3 To determine knowledge sharing strategies that exist in the organisation
- 1.3.4 To determine how academics are leveraging knowledge assets in their core functions of teaching, research and consultancy.
- 1.3.5 Determine attitude of academics towards knowledge sharing
- 1.3.6 Find out factors influencing knowledge sharing in the Universities



## **1.4 Major Research Questions**

The main research question this study sought to address is: to what extent are academics in Tanzanian Universities sharing knowledge?

The study was addressed the following specific research questions:

- 1.4.1 How does organisational culture promote or hinder knowledge sharing among academics in the universities? (links with objectives 1.4.1 and 1.4.5)
- 1.4.2 To what extent do universities in Tanzania support knowledge creation and sharing among academics? (Linked to
- 1.4.3 What knowledge sharing strategies exist in the universities?
- 1.4.4 How are the academics leveraging knowledge assets in their core functions of teaching, research and consultancy?
- 1.4.5 What is the attitude of academics towards knowledge sharing?
- 1.4.6 What factors influence knowledge sharing among academics in Tanzanian universities?

## **1.5 Significance of the study**

This study intended to contribute to the field of KM and sharing in Tanzanian universities. The importance of knowledge sharing to improve staff competency, ability and efficient performance at work has been widely documented. This study would contribute to providing necessary information upon which KM policies can be developed. It would also assist in improving the necessary infrastructure for knowledge in the universities in Tanzania. The study creates awareness about importance of knowledge sharing in the universities.

## **1.6 Scope and Limitation of the Study**

The study focused on the knowledge sharing among academics in selected universities in Tanzania. The respondents included academic staff, Deans of faculties and librarians. The study sites included four universities; St Augustine University of Tanzania (SAUT), Sokoine University of Agriculture (SUA), Mzumbe University (MU), and University of Iringa (UoI), of which two are publicly funded while another two, are privately funded. These universities were selected for the study because they have a long history of offering higher education in Tanzania and yet have received relatively little research attention in the area of knowledge sharing among academics compared to universities in major urban settings such as Dar es Salaam.

The study was also limited by the literature reviewed on knowledge sharing, which is mostly concentrated in developed and transitional economies and less on Africa.

## **1.7 Structure of Dissertation**

This section provides a summary of the chapters covered in the thesis and their contents.

### **Chapter One: Introduction**

This chapter provides background of the study, site of the study, statement of the problem, research objectives, research questions, scope and limitation, preliminary literature, theory and methodology.

### **Chapter Two: Theoretical Framework**

This chapter explicates knowledge management theories, such as Social Exchange Theory (SET), Social Capital Theory (SCT), Organisational Knowledge Creation Theory (OKCT) and Knowledge sharing model.

### **Chapter Three: Literature Review**

This chapter presents literature both empirical and theoretical literature from books, book chapters, journal articles, conference proceedings and online databases. The literature is organized according to themes derived from research questions, theory and broader issues around the research problem. This chapter also presents the summary of the literature reviewed.

### **Chapter Four: Research Methodology**

This chapter describes research paradigm, research approaches, research design, and population of the study, sample size, data collection methods, reliability and validity of the instruments, data analysis and ethical considerations.

## **Chapter Five: Data Analysis and Presentation**

This chapter presents the results of the study. Data collected was presented and analyzed both quantitatively and qualitatively. Quantitative data was coded and analyzed using computer software (SPSS) then presented in tables, graphs and charts while qualitative data was analyzed thematically and presented in narrative form.

## **Chapter Six: Discussion of Findings**

The chapter discusses the findings presented in chapter five using theory and extant literature.

## **Chapter Seven: Summary, Conclusion and Recommendations**

This chapter presents summary, conclusion and recommendations. The chapter also suggests further areas of study.

### **1.8 Summary**

This chapter presents the background to the study, research problem, objectives of the study, research questions, significance of study, scope and limitations of and summary of the chapter.

## **CHAPTER TWO**

### **THEORETICAL FRAMEWORK**

#### **2.1 Introduction**

There are several theories and models used to underpin research in knowledge management. These theories and models include among others Social Exchange Theory (SET) developed by George Hormans in 1958; Social Capital Theory (SCT) developed by Bourdieu in 1986 (Hauberer, 2011); Organisational Knowledge Creation Theory (OKCT) developed by Nonaka and Takeuchi in 1995 and Knowledge Sharing model developed by Cheng, Ho and Lau (2009). Theory is defined by Stangor (2015:35) as an integrated set of principles that explains and predicts many, but not all observed relationships in a given investigation. Check and Schutt (2012:34) assert that theory is a logically interrelated set of propositions that help to make sense of many interrelated phenomena and predict behaviour or attitude that are likely to occur when certain conditions are met.

Swanson and Chermak (2013) assert that theory describes specific spheres of knowledge and how such knowledge works. Theories are formulated to explain, predict, and understand phenomena, in many cases, to challenge and extend existing knowledge within the limits of critical bounding assumptions. The purpose of a theory is therefore to help the researcher explain the meaning, nature, and challenges associated with a phenomenon and use that knowledge and understanding to act in more informed and effective ways. It also provides ideas to develop research and the researcher to know what to look for in a study and to specify the implications of the findings for other research (Libraries, 2015).

A theoretical framework on the other hand introduces and describes the theory by explaining why the research problem under study exists (Swanson & Chermak, 2013). Moreover, the theoretical framework connects the researcher to existing knowledge. Theoretical framework also specifies which key variables influence a phenomenon of interest and highlights the need to examine how those key variables might differ and under what circumstances. The researcher therefore needs to develop theoretical framework that will provide indication of which theories can be used in the course of the study.

## **2.2 Social Exchange Theory (SET)**

Social Exchange Theory (SET) was introduced in 1958 by the sociologist George Homans. SET embraces the fundamental concepts of modern economics as a foundation for analyzing human behavior and relationships to determine social structure complexity. SET was initially developed for analyzing human behavior (Homans, 1958, as cited in Shiau & Luo, 2012). The theory was later applied by Blau in understanding organisational behavior (Blau, 1964). The Social Exchange Theory is a commonly used foundation for investigating individual's knowledge-sharing behavior. According to SET, individuals interact with others based on a self-interest analysis of the costs and benefits of such an interaction (Liu, Liang, Rajagopalan, Sambamurthy, & Wu, 2011).

SET in the organisational context places emphasis on the significance of norms, specifically social institutions and formal inter-organisational exchange behavior. SET states that individuals and organisations interact to maximize their rewards and minimize their costs. In addition, individuals build social relationships to maximize benefit with others by sharing their resources such as; money, knowledge, goods, status, love and services (Cropanzano & Mitchell, 2005).

According to Thibaut and Kelly (1959) SET is a social psychological theory that views relationships as the result of a cost-reward calculation made by the individuals concerned. SET therefore perceives reward as the source of relationship, without which the individuals' relationship is invalid. The theory states that if participants feel the rewards received from being in a given relationship outweigh the costs of being in that relationship, and then the relationship will remain intact. If the inverse is true, the relationship will dissolve. Knowledge sharing is a social exchange between individuals and derives reciprocal benefits for their competitive advantage and mutual benefit. Thibaut and Kelley (1959) argue that individuals engage in a social exchange because of their anticipated reciprocity, expected gain in reputation, influence on others, altruism, perception of efficacy and direct reward.

According to Blau (2009) marginal utility and indifference curves are two concepts which are foundational to the SET. Blau explains 'marginal utility', as the gain or loss from an increase

or decrease in the consumption of that good or service. The concept of 'indifference curves' (supply and demand) is used to describe the interactions between two persons in extrinsic exchange. Blau sees three types of expectations with regard to indifference curves namely; general, particular, and comparative. The general expectations are associated with one's roles. In contrast particular expectations are associated with rewards received from a particular person, while comparative expectations are the rewards of a relationship minus the cost of maintaining the relationship (Blau, 2009). Additionally, Blau pointed out that trust, commitment and social interactions are essential for the social exchange process.

### **2.2.1 Trust and Commitment**

Trust and commitment are basic in maintaining exchange relationships among individuals. When trust exists among individuals, they are more willing to engage in interaction and they can share knowledge effectively. Lack of trust and commitment makes it difficult for two sides to exchange/share knowledge. Morgan and Hunt (1994) define trust and commitment. They point out that trust is the belief in an exchange partner's reliability and integrity. On the other hand they perceive commitment as an exchange partner believing that an ongoing relationship with another is so important as to warrant maximum efforts at maintaining it. That is, the committed parties believe that the relationship is worth working on to ensure that it exists forever.

SET explains that mutual commitment of individuals is important for the exchange/sharing of knowledge to be successful. Creating trust is an important aspect of social exchange because social exchange theory is governed to a large degree by social obligations rather than by contracts (Blau, 2009). Trust is therefore seen as a valuable means of enhancing knowledge sharing (Probst, Raub and Romhardt, 2000)

According to SET trust-building between two parties (between individuals, individuals and organisation) may start with relatively small or minor resource exchanging, and that as the value of the rewards one receives increases, the more valuable the rewards one must give in return. Hsu, Yen and Chang (2007) noted that willingness of individuals to share knowledge with others that has been acquired or created are major concerns and trust has been seen as a valuable means to improve knowledge sharing. Cropanzano and Mitchell (2005) assert that

the basic tenets of SET are that relationships evolve over time into trusting and mutual commitments and parties must abide by certain rules and norms of exchange. Within university environments, it may be argued that social exchange relationships develop when management takes care of needs of academics by supporting them to build strong relationship to facilitate creation of knowledge and establishment of an effective knowledge sharing culture. Similarly, the academics need to trust each other and commit themselves to create and share knowledge.

### **2.2.2 Social Interaction**

The Social Exchange Theory (SET) views social interaction as exchange of more or less rewarding behaviours that lead to relation of mutual dependence over time (Harrington, 2006:186). SET explains how social processes such as knowledge sharing are affected by the nature of the relationship between participants and the social context in which the exchange takes place (Swift, 2007). Liang, Liu and Wu (2008) note that SET envisages individuals to share their knowledge because of their perception of benefits that may result from interaction. The actions to share knowledge would be motivated by the desire to maximise profit and minimise costs. SET posits that human nature is concerned with own interests and therefore individuals share their knowledge only when it is in their own interest. Moreover, individuals tend to minimize costs while maximizing rewards within their knowledge sharing relationships.

SET assumes that people participate in exchange behaviour because they expect reward. If they perceive that the reward they gain is less than the cost they invest, then they will stop exchanging resources (Liao, 2008). Therefore, individuals form relationships if rewarding; and they are gaining but not free services. Thibaut and Kelley (1959) have the view that SET relationships are formed on the basis of reward that is to be derived from such a relationship.

Molm (2001) explains that, SET and other exchange theories share a common set of analytical concepts and certain assumptions that describe the basic building blocks of social exchange. These include; actors, resources, structures and process. Molm further notes that actors in the exchange relationship can be individual persons, corporate groups or participants. Resources in the exchange relationship are possessed by the actors and these resources can be tangible or intangible goods and services like money, knowledge and others. Besides, exchange relations develop within structures of mutual dependence, which can take

several forms: direct exchange, generalized exchange and productive exchange. In direct exchange between two actors, each actor's outcomes depend directly on the other's behaviours. For example in Figure 1, A provides value to B and vice versa.

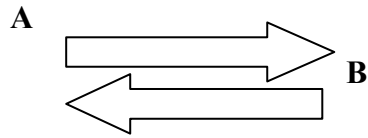


Figure 1: Exchange structures (Source: Molm, 2001)

In a generalised exchange among three or more actors, the reciprocal dependence is indirect. For example in Figure 3, A benefit by B from A is not reciprocated directly by B's giving to A, but indirectly by B's giving to another actor in the network. Ultimately, A may receive a return on her exchange from C in the system but not from B as shown in figure 2.

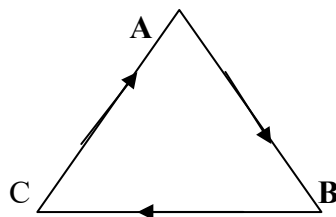


Figure 2: Generalized exchange (Source: Molm, 2001)

In productive exchange relationships; both actors must contribute in order for either to obtain benefit; for example co-authoring a book as shown in figure 3.

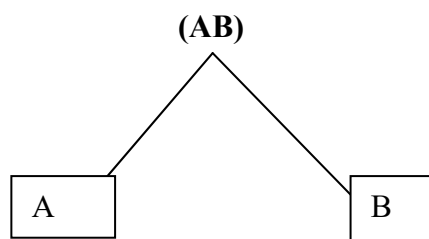


Figure 3: Productive exchange (Source: Molm, 2001)

In the exchange process interaction takes place within exchange structures. In this regard, exchange opportunities provide actors with the occasion to initiate an exchange; when an initiation is reciprocated the mutual exchange of benefits that result is called transaction. An



ongoing series of transactions between the same actors constitutes social interactions and exchange relations.

Molm (2001) observes that knowledge sharing needs actors, resources, structures and process in order for individuals to share. Individuals play a big role in knowledge sharing; resources (tacit and explicit knowledge) and structure is important in defining how individuals share knowledge. Finally, the process is important because it defines how the knowledge sharing will take place so that individuals and organisations can benefit to increase organisational performance.

The SET strength is in trust, commitment and social interactions which are vital among individuals within the organisation. Knowledge sharing is a social interaction; therefore, trust, commitment and social interactions are crucial components in knowledge sharing practices. Two or more people cannot share resources without trusting each other; if a group of people lack trust, they cannot build good relationships, and this can lead to knowledge sharing failure. As Molm (2001) points out, SET differs from classical microeconomic theories because its focus is on building long-term relationships. Finally, the strength of SET is also in the area of reciprocity as a major exchange rule in knowledge sharing.

The strength of the theory is that it is supported by a number of studies that have been conducted on knowledge sharing. Liang, Liu and Wu (2008) found that social interaction and trust derived from the social exchange theory, promote individual's knowledge sharing. Tsai and Cheng (2012) in their part observed that trust and commitment cultivate organisational commitment, which help to build individual knowledge sharing and intention to share knowledge. Wu, Lin and Lin (2006) found that SET mutual communication, trust and commitment in SET are important knowledge sharing elements.

The SET seems to concentrate on economic matters such as exchange of money and other tangible commodities (Hall, 2001b) but little on information systems which are also important to any organisation's business because it helps to facilitate the process of knowledge sharing. The SET also seems to overlook the effect of organisation culture in knowledge sharing but instead seems to place great emphasis on monetary value and rewards.

Moreover, the SET highlights that rewards and costs drive relationship. Therefore, does the absence of reward or gift mean that the relationship and exchange do not exist? As already demonstrated above, the exchange of knowledge/information needs willingness and commitment regardless of the outcome. On the contrary, rewards lead people to hide their knowledge (no reward no exchange of knowledge). Consequently, actors are attracted to only those who grant them rewards thus, leading to minimal sharing of knowledge (Blau, 2009). The SET was therefore not suited for this study as its main focus is on investigating knowledge sharing behaviours of individuals. The focus of the current study is on the status of knowledge sharing among academics in universities in the context of Tanzania.

## **2.3 Social Capital Theory (SCT)**

The Social Capital Theory (SCT) was developed by Pierre Bourdieu in the 1970s and early 1980s. SCT posits that social relationships among people can be productive resources in an organisation. The theory suggests that social capital, the network of relationships possessed by an individual or a social network and the set of resources embedded within it, strongly influence the extent to which interpersonal knowledge sharing occurs (Aslam *et al.*, 2013). Putman (1995) suggests that social capital facilitates coordination and cooperation for mutual benefit. On the other hand Nahapiet and Ghoshal (1998) argued that the basic proposition of SCT is that network ties provide access to resources. The network of relationships possessed by an individual or a social network and the set of resources embedded within it, also influence interpersonal knowledge sharing (Chiu, Hsu, & Wang, 2006).

In SCT, social relationships among people can be productive resources and influencing factors on knowledge sharing. The theory further asserts that the larger community in which a business organisation is embedded is a source of capital which contributes to organisational innovation performance (Roxas, 2008). Nahapiet and Ghoshal (1998); Aslam *et al.*(2013) agree that the social capital theory consists of structural, relational and cognitive dimensions.

### **2.3.1 Structural Dimension**

Structural dimension refers to the pattern of connections and social interactions between the members of the network (actors). Tsai and Ghoshal (1998) considered social interaction ties as channels for information and resource flows. The combination of the amount of time,

closeness and the reciprocal services characterize the interactions. In this study social interaction among academics and management is considered vital and a driver for knowledge sharing.

### **2.3.2 Relational Dimension**

According to Chiu, Hsu and Wang (2006) relational dimension of social capital theory consists of the kind of personal relationships people have developed with each other through the history of interactions. Moreover relational dimension comprises assets which are created and can be benefited through trust, norm of reciprocity and identification (Nahapiet & Ghoshal, 1998b). The relational dimension is based on assumption that participants can affect their behavior through reciprocal respect and friendship. The relationship also describes the degree of trust ensuing from social interaction, reciprocity and identification (Chow & Chan, 2008). Therefore, relational dimension considers trust, reciprocity and identification as the important elements in social capital exchange among individuals.

#### **2.3.2.1 Trust**

Trust has been viewed as a set of specific beliefs dealing primarily with honesty, goodwill and allowing partners to socialize with each other. It also reduces social complexity relating to future activities of the other party (Gefen, Karahanna, & Straub, 2003). Social capital theory perceives trust as a valuable element when people exchange capital. The trust among individuals in an organisation is considered an intellectual capital exchange (Nahapiet & Ghoshal, 1998b). Trust is also viewed as an organisational value creation (Tsai & Ghoshal, 1998) and is also important in knowledge sharing within online environments (Pavlou & Gefen, 2004). Reading, Gefen and Arinze (2002) assert that trust is important in knowledge sharing in virtual communities, trust promotes sharing among individuals. Similarly, Nonaka (1994) noted that interpersonal trust among academics and organisation creates an atmosphere of knowledge sharing. Trust creates and maintains exchange in relationships which in turn leads to sharing knowledge of good quality. Along with the network of relationships, trust and norms are important sources of social capital (Adler & Kwon, 2002). Consequently, trust is associated with positive quality and quantity of knowledge sharing in the universities.

### **2.3.2.2 Reciprocity**

Chiu, Hsu and Wang (2006) describe norm of reciprocity as knowledge exchange that are mutual and perceived by the actors as fair. Blau (2009) describes reciprocity as action that are subject to rewarding reactions from others and that come to an end when these expected reactions are not cooperative. The importance of reciprocity motivates knowledge sharing among actors.

### **2.3.2.3 Identification**

Nahapiet and Ghoshal (1998) pointed out that through identification process people perceive themselves as associated with a person or a group. Identification acts as a resource that affects the perception of benefit from knowledge exchange. Identification includes a members' sense of belongingness and positive feelings towards a social network and explains the readiness to remain an active member of the network. Individuals usually tend not to share knowledge until other people are recognised as group-mates. Hence identification of academics in universities is important in stimulating a knowledge sharing attitude (Chiu *et al.*, 2006). Members of an academic community with their social network would share their knowledge effectively. The study conducted by Chiu, Hsu and Wang (2006) found a positive relationship between identification and knowledge sharing. Consequently, Identification in social capital theory helps individuals to maintain commitment of willingness to exchange resources. According to Nahapiet and Ghoshal (1998) identification acts as a resource influencing the motivation to combine and exchange knowledge among individuals and management.

## **2.3.3 Cognitive Dimension**

Chiu, Hsu and Wang (2006) assert that cognitive relates to the resources that allow the formation of shared interpretations and meanings within a network such as shared language and vision.

### **2.3.3.1 Shared Language**

Shared language is vital in facilitating access knowledge among people (Nahapiet & Ghoshal, 1998b). On the other hand Lesser and Storck (2001) argue that codes of languages are

different, this keeps people apart and makes them fail to understand each other. Lesser and Storck further comment that shared common language goes beyond the language itself, and extends to shared language including acronym and underlying assumptions that are the staples of day to day interactions.

Nahapiet and Ghoshal (1998) affirmed that shared language influences the conditions for the combination and exchange of intellectual capital in several ways such as; to facilitate partners to gain access to the knowledge. It also provides a common conceptual apparatus for evaluating the likely benefits of exchange and combination. Shared language enables people to combine the knowledge they gained through social exchange and share with others. In this regard shared language facilitates communication which leads to understanding of the shared ideas. Therefore language sharing especially in an environment where academics are using different languages is important to facilitate knowledge sharing among them. Chiu, Hsu and Wang (2006) found that shared language has positive relationship with the quantity of knowledge sharing; it motivates academicians to get actively involved in knowledge sharing practices.

#### **2.3.3.2 Shared Vision**

Shared vision consists of common goals and ambitions of the members of a social network. It creates common understanding about the ways of interaction and better opportunities for resource sharing without any misunderstanding (Aslam *et al.*, 2013). Tsai and Ghoshal (1998) noted that a shared vision represents collective goals and ambition of the member of the university. Shared vision in the context of this study is therefore considered as a bonding mechanism that helps different departments of the university to assimilate their knowledge. It is assumed that academicians who share a vision will more likely become partners in knowledge sharing. Chiu *et al* (2006) argued that academics are bound by shared values and goals as these make them to work cooperatively which is beneficial to the university. In this study, shared vision is imperative as it is expected to increase understanding the value of knowledge sharing for enhanced organisational performance; especially the universities in the context of this study.

Figure 4: Shows social capital theory components; structural, relational and cognitive dimensions in relation to knowledge sharing that have been discussed above.

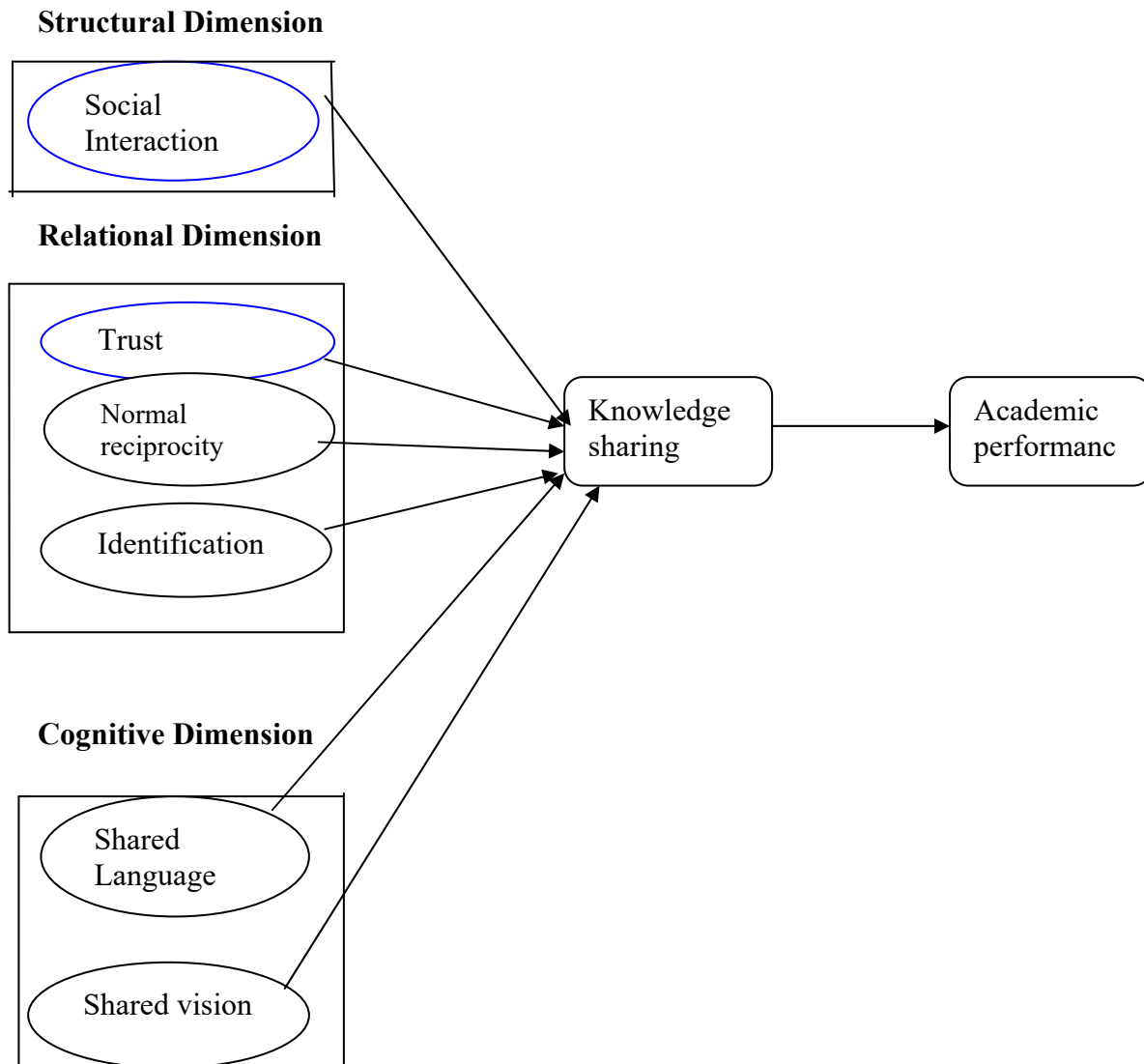


Figure 4: Social theory components as adopted from (Source: Aslam *et al.*, 2013)

The SCT considers social interaction ties as channels for information and resource flows. The SCT has three components namely; trust, normal reciprocity, shared language and vision. In order to share knowledge, trust is important as well as shared language. Academics and university management need to establish social interactions, trust, reciprocity and shared language for effective sharing of knowledge. Therefore, trust, normal reciprocity and shared language are important components in knowledge sharing. A number of related studies on knowledge sharing have used SCT. Noor and Salim (2012c) used SCT to study the relationship between individuals, groups and organisations in knowledge sharing; Chiu, Hsu and Wang (2006) found that social interactions had significant influence in knowledge

sharing and that trust played an important role in increasing the quality of knowledge shared. Hau (2013) outlined the strengths of SCT in social ties (structural dimension), social trust (relational dimension) and shared goals (cognitive dimension) which influence knowledge sharing among individuals. Lin, Featherman and Sarker (2013) found that SCT provides good prediction of social media users' information sharing practices.

The Social Capital Theory does not have technological components which are important in knowledge sharing in organisations. In the current study, technological support is important to the academics to enable them to share what they have for academic performance. ICT plays a big role to organise, store and facilitate retrieval of knowledge. Moreover, the SCT does not take into account the influence of individual and organisation culture on knowledge sharing. Culture has been found to play a key role in knowledge sharing and cannot be overlooked in knowledge sharing studies. For the reasons SCT was not found suited for this study.

## **2.4 Organisational Knowledge Creation Theory (OKCT)**

Organisation Knowledge Creation Theory (OKCT) was developed in 1995 by Nonaka Ikujiro and Takeuchi Hirotaka. This theory has developed rapidly in academia and broadly diffused in management practice. The theory was proposed by Nonaka and Takeuchi (1995a) to explain the phenomenon of organisation knowledge creation. They defined knowledge as justified true belief to reflect the context in which knowledge exists. They pointed out that individuals justify their truthfulness of their beliefs based on their interactions with other people. They further emphasised that it is the responsibility of the organisation to create new knowledge, disseminate it, make it shared by the organisation staff, and embody it in products, services and systems.

Organisation knowledge creation theory has seen an increasing interest in organisational knowledge creation among academics and managers in institutions; as a result the theory has become an integral part of universities curricula and has impacted management practices in various institutions (Nonaka, Krogh, & Voelpel, 2006). According to this theory, organisation knowledge is created by individuals, who share it, and finally that knowledge is turned to

organisational knowledge. The knowledge created can be shared through different channels, such as; observation, imitation, face to face meetings, journals, electronic media, and more.

The Organisation Knowledge Creation Theory as stated by Nonaka and Takeuchi (1995a) is concerned with identifying conditions necessary for knowledge creation in order to improve innovation and learning in organisation. Nonaka and Krogh (2009) noted that the theory aims at explaining organisational creativity, change, and innovation based on the four modes of OKCT, namely; Socialization, Externalization, Internalization and Combination.

Nonaka, Krogh and Voelpel (2006) asserted that Organisation Knowledge Creation Theory is aimed not only at explaining the nature of knowledge assets and strategies for managing them, but also for complementing the knowledge based view of the firm and the theory of dynamic capabilities that focus on dynamic processes of organisational knowledge creation. Ichijo (2007) also emphasises that the most significant determinant of organisational performance depends on the level of knowledge created and shared in the organisation. The theory has two dimensions which, Nonaka and Takeuchi (1995a) describe as: epistemology and ontology dimensions of organisational knowledge creation.

#### **2.4.1 Epistemology**

The epistemological perspective focuses on tacit and explicit knowledge. Tacit knowledge is difficult to articulate because it resides in minds of individuals and is normally acquired through experience, observation, imitation and face to face meetings. It also needs mutual trust among individuals for effective knowledge sharing. Explicit knowledge on the other hand is the knowledge which is documented and it is easy to transfer among individuals because of its nature, it can be in hard copy or soft copy, written form, recorded, or pictorial (Nonaka & Takeuchi, 1995).

#### **2.4.2 Ontology**

The ontological dimension of knowledge creation ranges from individual to group, team and organisation. The ontological dimension is also concerned with the levels of knowledge creating entities; individuals, group, organisational, inter-organisational and technology. According to this theory, knowledge creation originates within the individual and develops



through social interaction from individual to individual, from individuals to teams, and then from teams to the whole organisation. Therefore, the organisation defines specific problems, identifies the knowledge, shares it, and develops new knowledge to solve the identified problems (Nonaka *et al.*, 2006). Both tacit and explicit knowledge can be shared and eventually used to create new knowledge.

Explaining the distinction between tacit and explicit knowledge, Nonaka and Takeuchi (1995) suggested that the creation of new knowledge in organisations can be described with a four-stage spiral model, Socialization, Externalization, Combination and Internalization. The interaction between tacit knowledge and explicit knowledge is not restricted to one ontological level of knowledge creating entity like individual, group, organisational and inter-organisational levels. The organisation uses tacit knowledge created and accumulated at the individual levels. Then tacit knowledge is amplified through four modes of knowledge conversion of socialization, externalization, combination and internalization (SECI); and crystallised at higher ontological level, shared to create new knowledge (Nonaka, Toyama, & Konno, 2000).

The combinations of epistemology, ontology and knowledge conversion are the starting points of the organisational knowledge creation theory developments (Nonaka *et al.*, 2006). Knowledge creation is a journey from being to becoming, in the organisation; knowledge becomes or expands through a four modes of knowledge conversion process (SECI) described above. SECI model is the central base of organisational knowledge creation theory. SECI is also known as the engine of knowledge creation, because of its four modes of knowledge conversion where tacit knowledge can be converted to explicit knowledge and vice versa. The SECI model is presented in Figure 5.

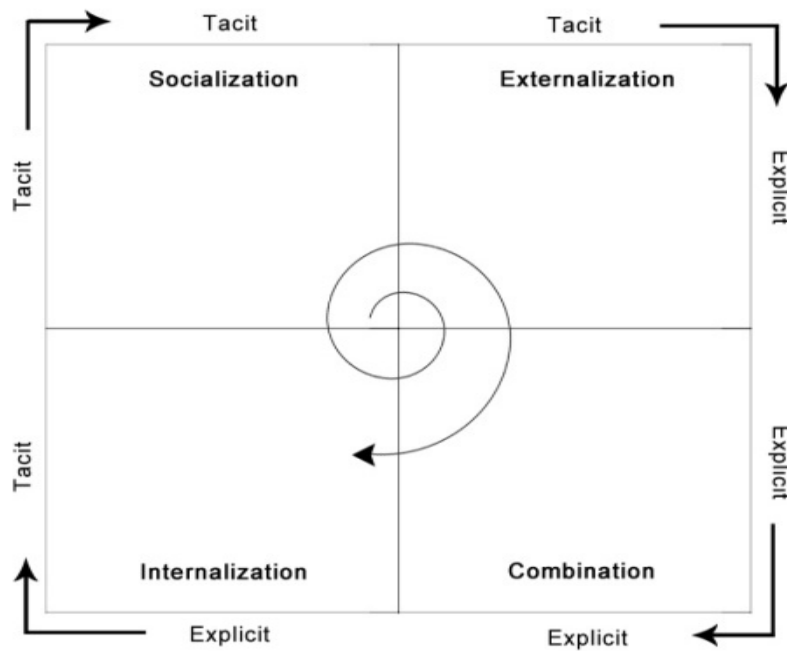


Figure 5: SECI Model (Source: Nonaka & Takeuchi, 1995)

### 2.4.3 Socialization

Socialization is a process of sharing and converting tacit knowledge to tacit knowledge, thereby creating new tacit knowledge such as shared mental models and task-related technical skills. Socialization seeks to share tacit knowledge among individuals through, interaction observation, experience and imitation. For example, the employees on the job training acquire tacit knowledge through experience, creative dialogue between individuals and enhancement of mutual trust among them (Nonaka & Takeuchi, 1995). Accordingly, individuals must basically be willing to share and exchange knowledge internally as well as externally in organisations (Holden & Glisby, 2014).

### 2.4.4 Externalization

The second mode in Nonaka's mode describes externalization, which aims at converting tacit into explicit knowledge. Individual's tacit knowledge could be conceptualised mostly by expression of its language. Moreover, the central process in creating a new concept involves coming up with language to communicate new ideas and create new knowledge which can be shared. In this regard, Nonaka, Toyama and Konno (2000) revealed that when tacit knowledge is made explicit, knowledge is crystallized, thus allowing it to be shared by others

and it becomes the basis of new knowledge. Nonaka and Takeuchi (1995) suggested that concepts and propositions must be expressed in a systematic language and coherent logic based on the commonness of individuals' perception. The success of externalization process according to Nonaka *et al.* (1994) depends on group commitment of individuals.

#### **2.4.5 Combination**

The third mode in Nonaka *et al.*'s model describes the combining and systematization of explicit knowledge (explicit to explicit). The tacit knowledge that has been elucidated in preceding mode of the model is now subject to sorting, combination and categorisation (Nonaka & Takeuchi, 1995). Explicit knowledge can then be converted into more complex and systematic sets of explicit knowledge and made partners to share new knowledge effectively (Nonaka *et al.*, 2000).

In addition, the key practices of combination are; acquiring, integrating, processing, and disseminating internal and external existing information. Combination can be facilitated by modern technology through networking, to store organisation information in the databases to facilitate sharing of knowledge. In the case of current study, academics in universities are expected to share explicit knowledge through networks such as; Web 2.0, internet and intranet. Moreover, both academics and university officials who are engaged in planning strategies for knowledge sharing can access online stored information after converting it into new knowledge.

#### **2.4.6 Internalization**

Internalization aims at reconverting explicit knowledge to tacit knowledge (Nonaka *et al.*, 2000). Individuals play a key role in relation to the concept of learning by doing. When experiences through socialization, externalization, and combination are internalized into individual's tacit knowledge bases in the form of shared mentor models they become valuable assets in organisational levels (Nonaka & Takeuchi, 1995). Moreover, verbalized and diagrammed knowledge need to be transferred into documents, manuals or oral stories to enrich individuals' tacit knowledge. According to SECI tacit knowledge accumulated by individuals can generate a new spiral of knowledge creation when partners share it through socialization, externalization, combination and internalization as shown in figure 6.

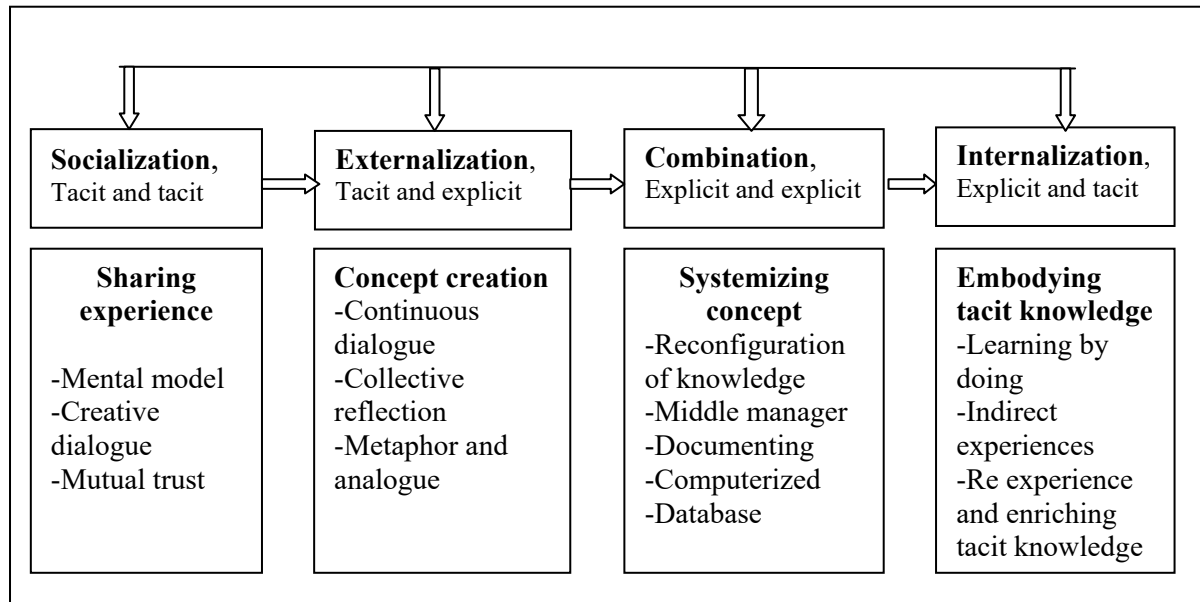


Figure 6: Knowledge creation process (Source: Nonaka *et al.*, 2000)

A number of studies have been conducted to test SECI with positive results (Dyck, Starke, Mischke & Mauws, 2005; Schulze & Hoegl, 2006). The studies concur that the four knowledge creation modes interplay between tacit and explicit in the creation of new knowledge.

Different practitioners such as (Krogh, 1998; Krogh, Ichijo & Nonaka, 2000; Tsoukas & Mylonopoulos, 2004) have researched the foundation of the organisational knowledge creation process and their results contributed to a five phase model of the organisational knowledge creation process: Sharing tacit knowledge, creating explicit concepts, justifying concepts, building an archetype and cross-levelling knowledge as shown in Figure 7.

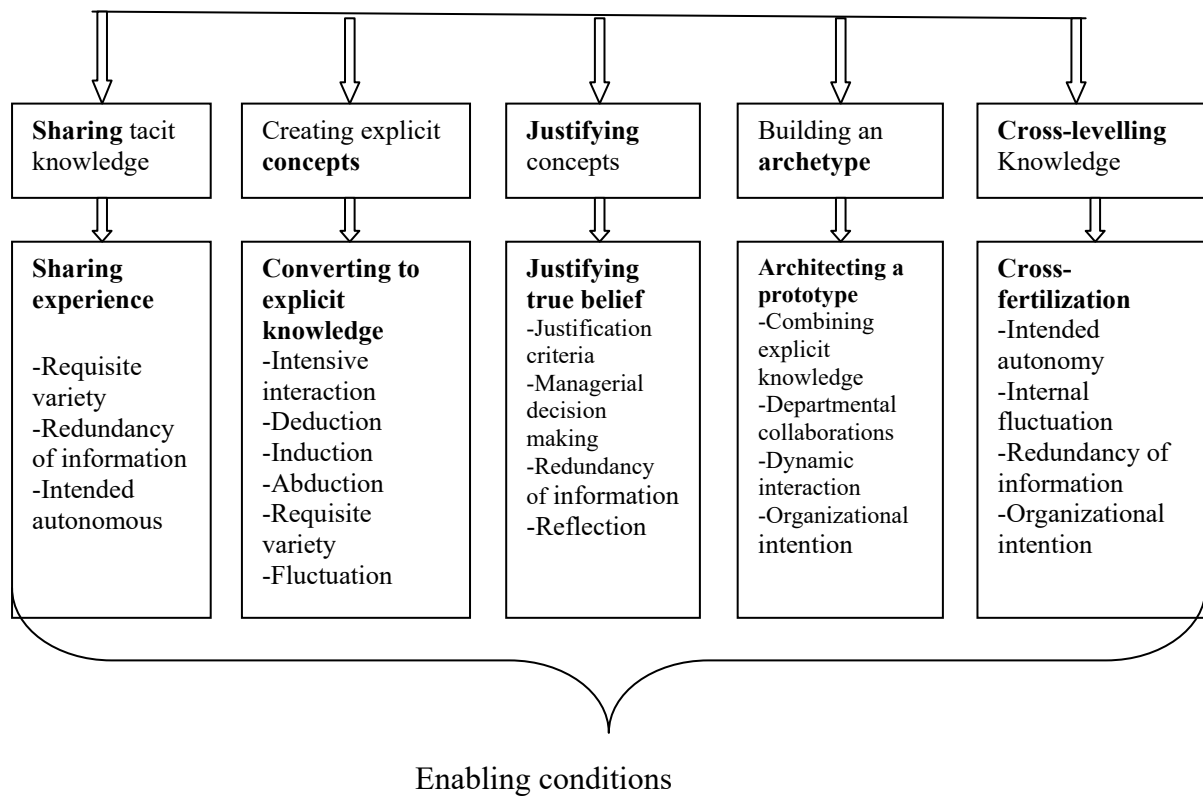


Figure 7: Five phase model of the organisational creation process (Source: Nonaka & Takeuchi, 1995a)

According to Nonaka and Takeuchi (1995) sharing tacit knowledge corresponds to socialization. Such knowledge is shared through interactions, among individuals' by relying on continuous and interactive dialogue. In this regard, the individuals' knowledge are shared and synchronized through observation. Nonaka and Takeuchi (1995) describe creating concepts phase as one in which the individuals' shared tacit mental model is verbalized into understandable words, revised and finally crystallized into organisation explicit concepts. Explicit concepts are created cooperatively through dialogue, interactively and spiral process along with facilitations of multiple reasoning methods such as deduction, induction and abduction.

The Justifying concepts phase relates more to managerial decision making based on cost and profit margin. This phase allows organisations to determine if the concepts are really worthwhile for the organisation or not. If they are worthwhile the organisation uses them; and if not useful the organisation considers them as redundant and eliminates them. The management further formulates justification criteria in the form of organisational intention which are expressed in terms of strategy (Nonaka and Takeuchi, 1995).

Building an archetype is described by Nonaka & Tekuchi (1995) as the phase where by justified concepts are converted into a more tangible archetype. The model of operating mechanism is built by combining new explicit concepts with existing explicit knowledge. In this process partners can develop a model of the practical system to ensure the dynamic prototyping process, and collaborative involvement of multiple functions in the organisation.

Lastly at the cross-leveling knowledge phase, the knowledge created is expanded across the organisation. The knowledge creation process never ends after cross-leveling phase which occurs both intra-organisationally and inter-organisationally, but extends to sharing tacit knowledge. In order to function effectively each unit in the organisation has the autonomy to apply created knowledge freely so that they can share and create new knowledge for the performance of the organisation (Nonaka & Takeuchi, 1995).

The SECI appreciates the dynamic nature of knowledge, knowledge sharing and explains how knowledge can be created and shared through socialization, externalization, combination and internalization. Adachi (2011) examined SECI model and concluded that Nonaka's SECI model, may provide a comprehensive and integrative conceptual framework for Organisational Knowledge Creation Theory, even in the theoretical context of organisation studies in the West Nonaka and Krogh (2009) established that OKCT contributes to the concepts of tacit knowledge and knowledge conversion in organisation. Song (2008) posits that knowledge creation through SECI allows social interactions, which influence trust among knowledge sharers in an organisation.

The OKCT however is doubted for its tacit universalistic assumptions, as it is based on values very much embedded in Japanese work practice and culture. OKCT is limited by the fact that it is embedded within and reflects the value and culture of Japanese business. Glisby and

Holden (2003) acknowledge that each of the four modes of SECI is deeply Japanese rooted. SECI model should be treated only as a strongly culturally biased metaphor that has no implications outside of the Japanese reality. The study on contextualizing Nonaka's theory of knowledge in China, Hong, Snell and Mark (2014) revealed that SECI model was extremely difficult to replicate in China because the model is culturally embedded to Japan. The OKCT is not an universal model (Glisby & Holden, 2003) therefore not suited for the current study. Consequently, Michailova (2011) pointed out that it is important to avoid blindness and pay careful attention to relevant embedded contextual factors when considering knowledge management model that have been developed in one country the SECI model in particular.

## **2.5 Knowledge Sharing Model**

The knowledge sharing model which is used to underpin this study was developed by Cheng (Cheng *et al.*, 2009). This model is hinged on three factors: organisational, individual and technology that influence knowledge sharing activities.

### **2.5.1 Organisational Factor**

Organisational factor comprises management support to create a climate that supports, encourages and provides adequate resources for knowledge sharing within the organisation. Positive attitude of organisation on knowledge sharing leads to effective knowledge sharing in the organisation. Connelly and Kelloway (2003) found that perceived management support for knowledge management and sharing initiatives is an important predictor of people's normative perceptions of knowledge sharing. Management support is also an important variable in the knowledge sharing model that harmonizes individual, organisation culture, structure, reward systems and policies made on knowledge management and sharing. Noor and Salim (2011) supported that management support helped in formulating policies, developing organisational culture and innovation in an organisation.

Organisation culture is concerned with shared values, norms and beliefs on knowledge sharing. It is also concerned with practices that describe how to think, feel, and act within an organisational setting. Al-Alawi, Al-Marzooqi and Mohammed (2007) define Organisation culture as the shared values, beliefs and the underlying assumption that catalyse

organisational learning when faced with the environmental problems and the way to solve problems.

Singh and Kant (2008) describe organisational culture as the core beliefs, value norms and social customs that govern the way individuals act and behave in an organisation. It is the sum of shared philosophies, assumptions, values, expectations, attitudes, and norms that bind the organisations and make the knowledge sharing practices possible. Culture considers the multiple aspects mainly collaboration and trust. In relation to trust Al-Alawi, Al-Marzooqi and Mohammed (2007) observed that trust is one of the aspects of the knowledge friendly cultures that foster the relationship between individuals and groups, thereby, facilitating a more proactive and open knowledge sharing.

Syed and Rowland (2004) argue that knowledge sharing will be successful with the support structure that allows the flow of information between divisions with fewer restrictions. The well designed and flexible organisational structures encourage knowledge sharing and collaboration across boundaries within the universities. The formal organisational structures within the universities may encourage interactions among academics which enhance effective knowledge sharing (Gold, Malhotra, & Segars, 2001).

Organisation rewards and incentives motivate and influences knowledge sharing among academics. Rewards could be in monetary or non-monetary incentives which motivate employee and influence them to share knowledge with others. Bartol and Locke (2000) found a positive relationship between rewards and knowledge sharing. Similarly Kugel and Schostek (2004) found monetary rewards seemed to have an immediate effect on motivation to knowledge sharing. Hall (2001) on his part proposes implicit rewards like reputation and status as motivation to academicians to share knowledge. The reward and incentives are for individuals who are participating in knowledge sharing in organisations; without individuals organisation knowledge, sharing practice is invalid.

### **2.5.2 Individual Factors**

Individual factors refer to people who create and share both tacit and explicit knowledge. Nonaka and Takeuchi (1995) noted that individuals serve as knowledge originators and knowledge receptors. Individuals generate knowledge by exchanging their ideas and



experience through socialisation. As receptors of knowledge individuals seek and interpret the knowledge before it is transferred to any repository. In this regard, Kwakye and Nor (2011) point out that the creation and sharing of knowledge depends on the conscious effort of an individual who has to set the ball rolling for knowledge to be shared. Nonaka and Takeuchi (1995) indicated that the success of knowledge sharing in an organisation depends on the involvement of individuals, since individuals are originators and communicators of information. Similarly Lee and Choi (2003) supported that individuals are at the heart of organisational knowledge creation and use. Therefore, it is important to understand individual factors that influence individuals to share knowledge.

In order to share knowledge effectively individuals should be involved and should be willing to share. Willingness implies a positive attitude of the individual sharing knowledge with their peers. If the individuals lack willingness, then the knowledge sharing practice will be hampered. Syed-Ikhsan and Rowland (2004) commented that it is unrealistic to assume that all employees are willing to easily offer knowledge without considering what may be gained or lost as a result of this action.

Therefore to share or not share knowledge may be influenced by the individuals' belief like personal expectation. Moreover, individuals expect to receive something regarding their work. The expectation drives individual to work hard and share knowledge. Ismail and Yusof (2010) studied the impact of individual factors on knowledge sharing quality. They found that individual factors correlated significantly with knowledge sharing quality. According to the knowledge sharing model (Bulan & Sensuse, 2012; Cheng *et al.*, 2009) individuals are important because they are knowledge creators and knowledge sharers. In this study the individual refers to the academic staffs who are knowledge creators and users in the universities.

### **2.5.3 Technological Factors**

Technology facilitates and encourages knowledge sharing (Bulan & Sensuse, 2012). Besides, the information technology (IT) is an important intercession in knowledge sharing as, it is used to connect partners, and facilitate interaction and access to data which supports their daily activities. Knowledge management systems are often driven by technology if an organisation is using modern technology, knowledge sharing is simple, individuals have

chance to interact within and outside of their organisation. Singh and Kant (2008) underlined the importance of IT in enabling collection, storage, indexing and linking data and digital objects in order to support management decisions.

Well established Information technology infrastructure facilitates knowledge sharing practices by linking information communication structure such as data processing, storage and communications systems (Becerra-Fernandes & Sabherwal, 2010). In their views Wasko & Faraj (2005) advocated that technology enables academics to create linkages to external resources which make possible to share knowledge hastily and globally with large number of people. The use of Information technology facilitates information search, access and retrieval (Lin, 2007). Ruddy (2000) argued that improving knowledge sharing in a meaningful way requires a delicate marriage of technology with a keen sense of cultural or behavioral awareness.

Therefore, knowledge sharing cannot be separated from the use of technology, since it helps to facilitate communication and sharing of information efficiently. Besides, technology has the ability to offer instant access to large amounts of data and knowledge, to enable long distance collaboration that facilitates a team approach, both in and between business functions (Riege, 2005). The strength of this model is its incorporation of organisational, individual and technological factors which influence knowledge sharing. These factors involve interactions and trust, culture, communications, ICT and social networks that facilitate and promote knowledge sharing.

Therefore, the above three factors are central to knowledge sharing in an organisation. The model which is shown in Figure 2.8 presents three key variables of organisational, individual and technology factors. These factors have been found to be important in knowledge sharing as supported by different related studies. Khosravi (2013) found that individual and, technological factors, such as IT systems have the greatest impact on knowledge-sharing. Furthermore, organisational factors such as, culture of the university, social networks, and management support have positive impact on knowledge-sharing.

Cheng, Ho and Lau (2009) assert that knowledge sharing is a people process, the contribution of people in knowledge sharing is paramount in terms of knowledge production, if individuals are not willing to share knowledge across the organisation, the effort of

knowledge management will fail. Riege (2005) stresses that successful knowledge sharing depends on organisational culture and structures that facilitate transparent knowledge flows. In addition technology facilitates, encourages and supports knowledge sharing. Wangpitatwong (2009) reveals that technology supports, influences and increases ability to share knowledge. Chong and Besharati (2014) observe that organisational hierarchy, individual trust and knowledge sharing technological systems have direct relationships with knowledge sharing. Noor and Salim (2011) point out that organisation is a social entity where knowledge sharing takes place, it enables knowledge to be created, captured, organised and shared among individuals who are the key actors in implementing knowledge sharing practices.

Consequently, an organisation deals with policy formulation, structure, culture, reward system, work process and management support that enable organisation to maximize knowledge sharing practices. Individual attitudes, trust, personality, motivation, pleasure of sharing and willingness to share knowledge are essential in knowledge sharing. Technological factors such as IT Infrastructure and application enhance knowledge sharing and lowering communication barriers between participants (Bulan & Sensuse, 2012). The Knowledge sharing model is presented below in figure 8.

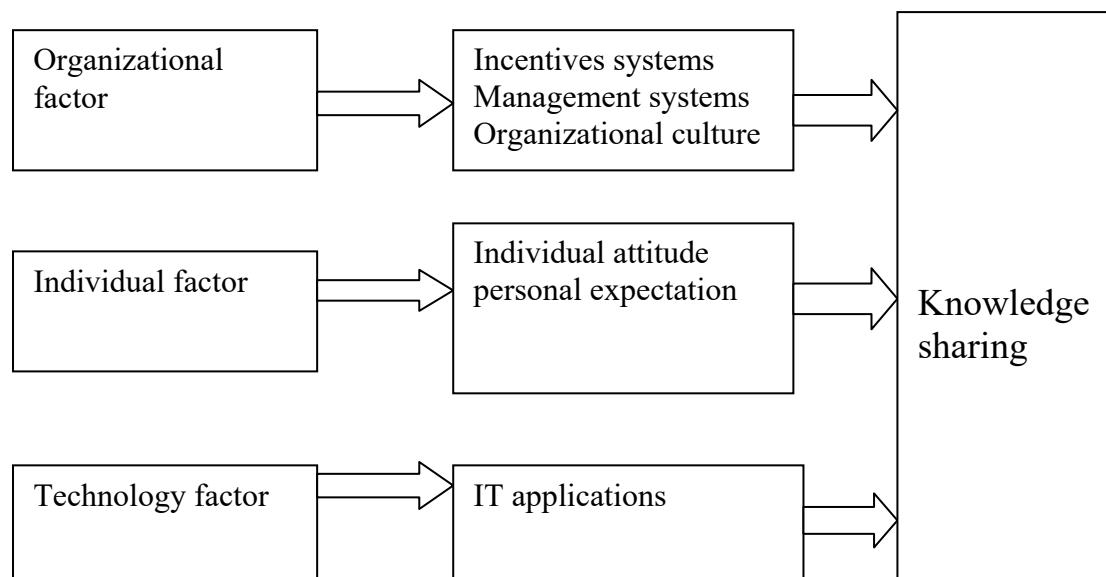


Figure 8: Knowledge sharing model (Source: Cheng *et al.*, 2009)

Cheng, Ho and Lau (2009) applied Knowledge Sharing Model in their studies on knowledge sharing among academics in Malaysia. They found that incentive systems and personal expectation were the two key factors driving academics to engage in knowledge sharing activity. Lin (2007) used the same model to study the influence of individual, organisational and technology factors on knowledge sharing. The results showed that individual and organisational factors significantly influenced knowledge-sharing processes. In their study Ismail and Yusof (2008) investigated how individual, organisation and technology factors, were used to leverage the knowledge of their staff, and noted that the organisation, need to understand the factors that make their staff share knowledge. They premised their study on the fact that if academicians did not share their knowledge then the benefits of knowledge sharing would not be actualized in the universities (Kwakyee & Nor, 2011). The strengths of this model is that it contains important elements needed in knowledge sharing such as organisational culture, structure, leadership, management support and commitment reward systems; individual attitude , personal expectations and IT applications that help knowledge sharing (Sawsan & Lyn, 2015).

Table 1 below maps the research questions to variables in the Knowledge sharing model underpinning this study.

Table 1: Mapping of research questions to attributes of the knowledge sharing model

<b>Research questions</b>	<b>Related Variables in the Knowledge sharing model</b>
How does organisation culture promote or hinder knowledge sharing among academics in the universities?	Management support, organisation culture, Organisation structure, knowledge sharing
To what extent do universities in Tanzania support knowledge creation and sharing among academics?	Organisation policy, Management support, knowledge creation, reward system, knowledge creation, knowledge sharing
What knowledge sharing strategies exist in the universities?	Management support, organisation policy, IT application, knowledge sharing strategies
How are the academics leveraging knowledge assets in their core functions of teaching, research and consultancy?	Knowledge creation, knowledge use,
What are the attitudes of academics towards knowledge sharing?	knowledge sharing, attitudes, Willingness to share, individual perceptions
What factors influence knowledge sharing among academics in Tanzanian universities?	Organisational, individuals, Technology

## 2.6 Summary

The theories reviewed above namely: Social Exchange Theory, Social Capital Theory and Organisational Knowledge Creation Theory are the most commonly used to underpin knowledge sharing. However, these theories seem to overlook significant factors influencing knowledge sharing, such as culture and technology. These theories therefore are not suited to this study. The study adopted knowledge sharing model. The Knowledge sharing model was used because it addresses all key variables that have been found to influence knowledge sharing such as organizational factors, individual factors and technology factors.

## **CHAPTER THREE**

### **LITERATURE REVIEW**

#### **3.1 Introduction**

The purpose for developing and presenting a review of the literature emerges from a desire to document the knowledge and ideas currently established concerning the identified topic. Boswell and Canon (2014) reveal that the main aim of reviewing literature is to establish what is known and unknown about a phenomenon that has not been totally resolved in practice.

The literature also intended to assess the evidence regarding the research topic by identifying and synthesising studies that examine the subject of interest. Moreover, it determines how an issue can be resolved and managed based on research evidence and to know the background and the context within which the research is conducted and lays out the foundation of the study (Boswell & Cannon, 2014). A literature review in doctoral studies gives a theoretical basis for the research and helps to determine the nature of the study (Boote & Beile, 2005). Therefore literature review is imperative to the study because the researcher will be familiar and knowledgeable with the research problem and knows how to carry out the study and identifies research gaps from the previous studies.

Literature reviewed in this study was carefully selected informed by the research questions and the relevant variables from the underlying theory such as organisational, individual, and technological factors.

The literature reviewed is sourced from books, conference proceedings, journal articles, indexing and abstracting services. The literature focuses on the following research questions:

1. How does organisational culture promote or hinder knowledge sharing among academics in the universities?

2. To what extent do universities in Tanzania support knowledge creation and sharing among academics?
3. What knowledge sharing strategies exist in the universities?
4. How are the academics leveraging knowledge assets in their core functions of teaching, research and consultancy?
5. What is the attitude of academics towards knowledge sharing?
6. What factors influence knowledge sharing among academics in Tanzanian universities?

### **3.2 Factors Facilitating and Hindering Knowledge Sharing Among Academics**

This section reviews literature on factors facilitating and hindering knowledge sharing. The literature is reviewed under sub themes; Organisational, individual, and technology factors.

#### **3.2.1 Factors Facilitating Knowledge Sharing**

The existing literature showed that organisational, individual and technology considered as the factors facilitating knowledge sharing. Organisational factor includes; organisation culture, organisation structure, communication, management support, strategic planning and reward systems. Individual factor consists of trust, awareness and openness. Technology factor includes ICT and related activities.

##### **3.2.1.1 Organisational Culture**

Culture is widely understood as a set of shared values, beliefs, customs, practices, principles and routines that underpin the behaviour of an organisation and its members, usually cultivated steadily over a long period (Jashapara, 2010; McDermott & O'Dell, 2001). Culture establishes an organisational context for social interaction and creates norms regarding what is 'right' and 'wrong' it also influences people to communicate and share knowledge (Ajmal & Koskinen, 2008). The culture both personal and organisational clarifies and reinforces standards of behaviour by guiding employees' words, conduct and provides behavioural stability. Steers, Sanchez-Runde and Nardon (2010) have a view that culture is shared by members of a group. Such cultures include assumptions, behaviours and values that influence attitudes and the social behaviour of group members to achieve their goals.

According to Ford and Chan (2003) organisation culture consists of trust, vocabularies, beliefs. These components influence how an organisation handles knowledge management

and sharing among staff. The University management, the world over, desires to develop knowledge sharing cultures where knowledge is shared easily among academics through social and electronic networks. Their aspiration is predicated on the premise that knowledge sharing cultures are more conducive to knowledge creation and better performance (Jashapara, 2010).

The willingness to communicate and share knowledge is influenced by cultural dynamics such as external environment (national culture) and internal environment (university and individual culture). Both external and internal culture promotes knowledge creation and sharing through socialization. Socialization which takes place through contacts with social group, seminars, formal and informal gatherings, involves familiarizing academics with the university's norms and values and adopting them. Therefore, organisational culture affects how academics learn, acquire, and share knowledge in their academic settings (Rai, 2011).

To enhance knowledge production in the university faculty should participate fully in knowledge creation and sharing. Cabrera and Cabrera (2002) assert that human resources and open communication are likely to promote an organisation culture that support knowledge sharing. Within university environment, faculties are embedded within an organisational mixture of disciplinary context and institutional alliances made up of numerous subcultures such as professional culture that may influence the way academics interact and share knowledge (Umbach, 2007). The professional culture for example holds the universal sub values necessary for the pursuit and dissemination and sharing of knowledge with others (Kim & Ju, 2008). Managing and sharing knowledge is about creating an environment and culture within an organisation that encourages the creation, sharing and transfer of knowledge. This requires creative managers and motivated employees who can sit together, put strategies together needed to establish a culture of knowledge sharing for their organisation (Mayekiso, 2013).

Organisational culture can also powerfully influence human behaviour and change the academics' behaviour in the universities towards knowledge sharing. However, the cultures in different universities will differ (Al-Alawi *et al.*, 2007) requiring different approaches. Each university has its unique culture, which develops overtime and reflects the university's identity in two dimensions: visible and invisible. The visible dimension of culture is reflected in the supported values, philosophy and mission of a firm while the invisible dimension lies



in the unspoken set of values that guide academics' actions and perceptions in the organisation.

In South Africa a study conducted by Finestone and Synman (2005) found that companies were afraid to acknowledge cultural differences because of major cultural sensitivity and, as a result, corporate culture was seen as the great equaliser of cultural exchanges. Knowledge-sharing environment was needed to help in the integration of South Africa's diverse cultures so that people can interact, learn from one another and innovate.

Despite of having different cultures, the universities' roles are similar and so certain common strategies will be needed such as commitment to an organisation's mission and shared values in the mission and vision of the organisation (Greenberg, 2011). The study by Tong, Tak and Wong (2014) in the context of Hong Kong found that organisational culture significantly influences knowledge sharing and job satisfaction. They further pointed out that knowledge sharing plays an important mediating role between organisational culture and job satisfaction. Probst, Raub and Romhardt (2000); Fink and Gururaja (2010) suggest that universities have to maintain a knowledge-based culture or they will not be able to prosper in today's competitive educational marketplace. Besides, good academic performance in educational institutions is predicated on knowledge sharing among faculty in order to exploit knowledge based resources (Wang & Noe, 2010).

The study by Al-Hawamdeh (2003) suggested that the mind set of academics should be geared towards knowledge sharing culture by creating a climate of trust and openness. However Bures (2003) is of the view that changing corporate culture that value knowledge sharing is not simple and quickly practicable. Instead, this change must be gradual and requiring a lot of time, energy and financial resources. The university management should therefore consider educating and sensitising academics to help them understand and appreciate the importance of knowledge sharing practices in the universities. The universities also need flexibility in creating a culture of knowledge sharing. In this regard Mohannak and Hutching (2007) assert that the creation of KM and sharing culture in organisations does not currently allow a standard procedure to be followed at all times and in every situation. They suggest that KM culture should be dynamic, flexible and contextual to improve knowledge creation and sharing in the organisation.

Davenport and Prusak's (1998), found that organisational culture is important for the success of knowledge sharing and management. Without a sharing culture the individual perceives knowledge sharing as a difficult exercise that is not easy to practice. Rikowski (2007) admits that cultural differences impact on knowledge sharing and KM process yet, as King (2007) points out sharing culture is a prerequisite for the implementation of knowledge sharing system. The partners in knowledge sharing process must have common beliefs, values and trust among each other. King (2007) further asserts that the conventional wisdom dictates that a culture of sharing must exist for the creation and sharing of knowledge to take place.

Therefore the universities' top management have a responsibility in creating an environment of sharing in their organisations to promote sharing of knowledge among academics. Previous studies conducted in USA (Issa & Haddad, 2008); in Taiwan, Yang, (2007); in Russia and China (Hutchings and Michailova, 2004) and in Bahraini (Al-alawi, Al-Marzooq & Mohammed, 2007) have confirmed that knowledge sharing is strongly related to organisational culture. This is echoed by Al-Hawamdeh (2003) who affirms that organisations through a collaborative culture often tie their knowledge sharing initiatives to their business strategies.

Therefore cultivating and promoting organisational culture is imperative for all knowledge stakeholders in the universities. Al-Hawamdeh (2003) insists that the success of KM practices depends on the successful integration of different skills sets across different cultures with a common goal in mind. Gottschalk (2005) reveals in a study conducted at the Cranfield school of management in UK that culture is at the top of the list of concerns among organisations regarding knowledge management and sharing.

Jashapara (2010) recognizes the diversity of cultures that are existing in different universities and points out the need for the universities to ensure their organisation cultures are such that they influence knowledge management and sharing among staff. This is possible despite cultural differences because of globalisation and ICT that have open an opportunity for organisational knowledge to be shared across national and cultural boundaries both intra and inter-organisationally (Pauleen, Wu, & Dexter, 2007).

Insisting the importance of culture in knowledge sharing Long and Fahey (2000) noted that organisational culture does not exist in a vacuum; it is shaped by the social culture in which

the organisation resides. Similarly, (Lin, 2008; Riege, 2005) point out that organisational culture and leadership has a significant impact on the intensity of knowledge-sharing. Culture is reflected in an organisation's values, norms and practises. Though leaders have had little or no education in the dynamics of culture and their mechanistic view of how organisations function leaves them blind where culture is concerned.

The organisational culture of sharing can be promoted according to Maier (2004) if leaders show visible trust to employees by their own behaviour. At the University of Nevada in the United States Wang and Noe, (2010) found that cultural dimensions were most likely to influence knowledge sharing though trust attracted the most research attention. In addition, Davenport and Prusak (1998) (cited in Jacobson, 2006) claim that knowledge sharing can be facilitated when people share the same work culture. Adams and Lamont (2003) on their part assert that the existence of positive knowledge sharing culture is a precondition for an organisation to have capability of knowledge sharing. If the organisation culture discourages knowledge sharing and promotes hoarding, then knowledge management and sharing will not exist at all. The university can successfully promote a knowledge sharing culture not only by directly incorporating knowledge in its business strategy, but also by changing individual's attitudes and behaviors to promote willing and consistent knowledge sharing (Lin & Lee, 2004). Nonaka and Takeuchi (1995) have suggested that university should create opportunities for academics interaction that facilitates knowledge sharing, by promoting organisational culture of sharing and making it known to employees.

Previous studies on knowledge creation and organisational learning have shown that knowledge-sharing activities are strongly influenced by cultural values of individual employees (Tong *et al.*, 2014), the kinds of people who get hired, the formal and informal expectations made of staff, the focus of reward systems, and how people interact (Gupta & Govindarajan, 2000).

Moreover, Long & Fahey (2000) reveal that culture shapes people's assumptions about what knowledge is important. Furthermore, culture creates a context for social interaction about knowledge, shapes the creation and adoption of new knowledge. Long and Fahey further assert that top management should implement cultures that enhance collaboration and have interactions for greater knowledge sharing outcomes. To promote knowledge-sharing, Smith and McKeen (n.d.) suggest building islands of sharing, and also building bridges between the

islands. Bridging the island connects academics and facilitates knowledge sharing among them because the barriers are removed and knowledge sharing practices can take place easily. Lin and Lee (2004) propose that the perception of top management towards knowledge sharing intentions is necessary for creating and maintaining a positive knowledge sharing culture in an organisation. Furthermore, Bartlett and Ghoshal (2002) suggested that the initiation and implementation of knowledge sharing culture should start with a top management value that sees knowledge assets as a competitive advantage. Al-Hawamdeh (2003) points out that managers are very important in creating knowledge sharing culture. The managers are policy and decision makers in the organisation, consequently they should serve as good examples in promoting knowledge sharing culture by communicating with their employees and making them part of knowledge sharing practices.

### **3.2.1.2 Organisational Structure**

Organisation structure is defined by Liao, Chuang and To (2011) as the formal allocation of work roles and administrative mechanism to control and integrate work activities. Organisation structure includes division of labour departmentalisation and distribution of power and responsibilities are formally separated, which is necessary to support the knowledge sharing and decision process of the organisations (Singh & Kant, 2008). It is the way in which tasks are properly separated, classified and coordinated (Islam, Jasimuddin, & Hasan, 2015). The organisational structure can be divided into bureaucracy and task force. Bureaucratic structure hinders smooth sharing of knowledge while task force structure is flexible, adoptable and brings a team to interact together to facilitate knowledge sharing (Ang & Massingham, 2007). Syed-Ikhsan and Rowland (2004) argued that knowledge sharing prospers with structures that support ease flow of information with fewer boundaries between divisions.

Well established organisational structures enable interactions and smoothen the progress of knowledge sharing among academics. Kim and Lee (2006) state that knowledge sharing can be facilitated by having a less centralized organisation structure, where employee work is segmented in structures which enable them to share knowledge freely and efficiently. In that regard, Yang and Chen (2007) suggest that organisations should create opportunities for employees' interactions to occur and employees' rank, position in the organisational

hierarchy to make possible knowledge sharing. The real advantage of knowledge may not be appreciated if organisational plans do not correspond to the established regulations of knowledge sharing and knowledge may not be used to its full potential if an appropriate structure is not in place (Claver-Cortés, Zaragoza-Sáez, & Pertusa-Ortega, 2007).

Therefore, the organisations should adopt an organisational structure which matches and supports its strategic vision and which employees are comfortable with. If the employees are not happy with existing organisation structure, knowledge sharing practices will be undermined. The study on organisational culture and knowledge sharing conducted by Al-Alawi, Al-Marzooqi and Mohammed (2007) confirmed that certain tasks are accomplished through cross-functional teams which are operationalised under well-established organisational structure. Likewise, Ismail and Yusof (2008) agreed that an organisation structure has an impact on knowledge sharing if it facilitates knowledge sharing between individuals and between departments. Chen, Huang and Hsiao (2010) therefore recommend that universities as knowledge generating institutions, should place premium on designing the internal structure to empower decision-making, standardize rules and procedures.

### **3.2.1.3 Communication**

Communication entails sharing or exchanging information. Communication can be oral or written. Human beings communicate through interaction, conversation and the use of body language (Al-Alawi *et al.*, 2007). Both oral and written communications are ideal for exchange of messages and consequently universities should establish a plan to educate academics to use both ways of communication for knowledge sharing. Ling, Sandhu and Jain (2009) found that 69.1 % of the respondents agree that knowledge sharing is clearly communicated in the American multinational company. Furthermore, the level of knowledge sharing was high due to good and clear communications among knowledge sharing stakeholders. (Smith & Rupp, 2002). According to Riege (2005), communication skills of employees play an important role in knowledge sharing behavior. In order to succeed, the communications should flow from both sides and from sender to receiver and vice versa. After receiving message the receiver is supposed to give feedback to complete the process of communication; If it is one sided communication, the sender or receiver will give up due lack of feedback. Besides, lack of reciprocity in communication can cause knowledge hoarding.

Inkpen (2005) states that academics must build good communication skills that enhance knowledge sharing.

#### **3.2.1.4 Management Support**

In the academic environment, competitive advantage requires academics to share knowledge with others regardless of their level of education and status ( Lin & Lee, 2004). Sharing knowledge improves the competency and efficiency of the academics as well as performance of the university. Gold et al. (2001) admit that in organisations, effective knowledge sharing is crucial and the way to leverage their core competencies to gain competitive advantage. In this regard, knowledge sharing requires the support of top management who are key in encouraging creation and knowledge sharing. Seba, Rowley and Delbridge (2012) talk about the key roles of leadership in knowledge sharing as, to contribute to employees' learning from their personal experience; to convince employees to transfer their knowledge to generate new knowledge and to influence decision-making process based on valuable knowledge shared among academics.

Singh and Kant (2008) pointed out that top management is responsible for each and every activity including knowledge sharing at all the levels of the organisation. Top management is responsible for development of organisational structure, technological infrastructure and various decisions making processes which are essential for effective creation, sharing and use of knowledge. The management is also responsible for formulation of knowledge management and sharing policies to guide KM activities. The policy guides and safeguards all activities related to knowledge sharing (Dewah & Mutula, 2016). The experience of Kenya as reflected in the study by Masoti and Masheka (2010) revealed that Knowledge Management Policy (KMP) though practiced was not well understood by most organisations within public sector organisations. The challenges faced by organisations included how to create and implement KMP as part of organisational culture, organisational strategy and organisational leadership. In addition, the organisations faced challenges such as lack of knowledge management policies, organisational culture, organisational strategy and organisational leadership which consequently hampered knowledge sharing.

Al-Hawamdeh (2003), asserts that management is responsible for encouraging interaction, communication among heads of departments in the university. Through heads of

departments, the employees in the respective departments are facilitated to interact and build mutual relationships among themselves. The top management is responsible for establishing an environment that is favorable to social interaction and which promote knowledge sharing (Connelly & Kelloway, 2003; Lin, 2006).

Hsu (2006) summarises three things that top management can do to facilitate knowledge sharing such as building sophisticated IT system for knowledge sharing; providing incentives to individuals to facilitate knowledge sharing and finally enhancing values and organisational culture of knowledge sharing that emphasise processes and structures that encourage knowledge sharing. Cheng *et al.*, (2009); and Uriarte (2008:57) noted that, to encourage and promote knowledge sharing, certain incentive schemes must be provided. The use of appropriate information and communication technologies should be enhanced by the university. Thakur and Thakur (2003) noted that it is the responsibility of top management to attract and motivate knowledge workers to achieve the desired organisational goals.

Jarvenpaa and Staples (2000) have found that organisational and managerial factors have a great deal and influence on how much knowledge-sharing individuals in organisations do. The management is responsible for supporting academics by organising training, seminars and workshop on knowledge sharing. The training helps the employees to be familiar with knowledge sharing benefits in the academic life and learning in the universities. In addition, training promotes and builds awareness among academics who are creators, users and sharers of knowledge. Kant and Singh (2008) emphasize that successful knowledge creation and sharing requires commitment and support from top management. Top management must provide good planning, organisation structures and communication strategies to successfully nurture a knowledge sharing culture.

### **3.2.1.5 Strategic Planning**

Strategic planning involves the operation of an organisation's capabilities and resources to achieve knowledge sharing goals. Lack of strategic planning will hinder successful knowledge sharing (Joshi, Parmer, & Chandrawat, 2012). The university can support knowledge sharing practice by having an effective long term sustainable strategic planning that values knowledge sharing. Knowledge sharing is usually linked to the organisation

business strategic plan to facilitate creation and knowledge sharing for the benefits of organisation. Once the organisation integrates knowledge creation and sharing in its strategic plan, it will be given special consideration during the implementation. In their strategic plan the universities need to create and set connections between academics and knowledge external sources to enable academics to share knowledge effectively (Paquette & Desouza, 2011). Therefore, lack of proper planning in knowledge management and sharing leads to the inefficient knowledge sharing practices in the universities (Maroofi, Nayobi, & Dehghani, 2013).

### **3.2.1.6 Reward Systems**

Social exchange theory of Blau (2009) posits that individuals engage in social interaction based on an expectation that it will lead in some way to social rewards such as approval, status, and respect. Wasko and Faraja (2005) point out that individuals contribute to knowledge sharing when they perceive that it will enhance their professional reputations. Therefore, to share knowledge individuals need awareness, trust, enjoyment, pleasure of sharing, self-efficacy, willingness to share and job satisfaction (He & Wei, 2009; Hung, Durcikova, Lai, & Lin, 2011; Wasko & Faraj, 2005).

Employees' motivation to share knowledge comprises intrinsic and extrinsic rewards. Finke and Will (2003); He and Wei (2009) and Hung *et al.*, (2011) clarify that academics will engage in an altruism action because it is enjoyable and they value it naturally and find it interesting. Academics will also share knowledge due to intrinsic altruism- unconditional kindness without the anticipation of a return, where an individual shares knowledge with the aim of achieving a sense of satisfaction. Wasko and Faraj (2005) state that employees are intrinsically motivated to contribute knowledge because they think that knowledge sharing behaviors will be worth the effort and enjoy helping others.

Individuals who derive enjoyment from helping others may be more favorably oriented toward knowledge sharing and more liable to share knowledge. On the contrary, Taylor (2006) found that altruistic motivation may be insufficient to aid knowledge sharing because the reward is not forced but it comes as a good feeling of an individual.



The extrinsic motivational factor such as reciprocity is a conditional gain where an individual is expecting benefits from their present actions. In reciprocity the behaviour is done in response to the previous action. The participants expect return when they contribute their knowledge to the organisation and to their social group as well (Fehr & Gächter, 2000). The reciprocity can be beneficial to knowledge sharers because they anticipate to be compensated by their colleagues. Boer, Berends and Van Baalen (2011) argue that effective knowledge sharing takes place when the incentive system is appropriate and individuals feel that they are benefiting from their knowledge assets.

The study of Bock (2005) found that reciprocity has positive aspects related to the intention of sharing knowledge. In South Korea, Kim and Ju (2008) found that reward system encouraged academics to share their knowledge. They noted that faculty members valued tangible rewards such as course reductions, more time and financial support for research, seminars and other financial incentives. Consequently the enhancement of such reward systems helps to strength university competitiveness in the education market.

The motivation factor in knowledge sharing seems to dominate in many universities and organisations, but not all organisations are rewarding their employees for knowledge sharing. Tan and Ramayah (2014) challenge motivations as the key determinants of knowledge-sharing intentions in the universities. They point out that knowledge can be shared among academics without demanding motivation, academics can contribute knowledge as part of their responsibility in their careers and feel comfortable than receiving rewards.

The importance of reward in enhancing knowledge sharing need not be over emphasised. Kant and Singh (2008); Yao, Kam and Chan (2007) in this regard point out that lack of motivation and reward system discourages people to create, share, and use knowledge.

### **3.2.2 Individual Factors**

Knowledge creation happens in our daily activities, in formal and informal gatherings. Individuals can create knowledge deliberately or without intention to benefit individual and for organisational development. Nonaka (1994) (cited in Paquette & Desouza, 2011) noted that prime movers in the process of organisational knowledge creation are the individual

members of the organisation. In this study, individuals refer to the academics that generate, use and share of knowledge in the universities.

They create knowledge from different ways such as personal activities or social interactions and relationships with others. According to Paquette and Desouza (2011) on many occasions individuals create knowledge unintentionally. The act of creating and sharing knowledge makes individuals experience a greater connection to the organisation which increases their possibility to contribute more knowledge in future. The importance of individuals in knowledge sharing is emphasized by Nonaka and Takeuchi (1995) who point out that for organisations to succeed in creating knowledge individuals are key elements in knowledge generation.

Nonaka and Takeuchi (1995) pointed out that in order to create new knowledge; individuals take existing knowledge and change it into a new knowledge through socialization, internalization, externalization and combination. They added that knowledge creation involves the transformation of knowledge between tacit and explicit knowledge and vice versa. Davenport and Prusak (1998) pointed out that knowledge is originated from the intelligence of individuals and individuals personality.

An individual personality to share knowledge may be characterized by his/her values, attitude, mood and emotion. Blending of personal characteristics is necessary for people to be successful in knowledge sharing (Chowdhury, 2005). According to Cabrera, Collins & Salgado (2006) the personality has five dimensions which influence knowledge sharing namely; emotional stability, extroversion, openness, agreeableness and conscientiousness. Emotional stability characterizes individuals as stable, controlled and secure. The extroverted individuals are sociable, talkative, and assertive. Openness to experience is linked to curiosity, artistic sensitivity and originality. Cabrera, Collins and Salgado (2006) further add that, agreeable is seen by others as cooperative, cheerful and supportive. Conscientiousness, on the other hand, may be related to both volunteering and seeking other people's knowledge in as much as employees perceive these behaviours to be an important part of their duties.

The individuals are able to generate new knowledge from those who are knowledgeable, share it and make contribution to organisational development. Therefore the ultimate goal of acquiring and sharing knowledge is the transfer of all of the individual's experience and

intellectual capital to others for the benefits of organisation (Yang, 2007). Individual knowledge sharing results in knowledge appreciation that enhances the outcomes of the university efficiency. Accordingly, the influence of individuals in knowledge sharing can be discussed in the following dimensions; trust, awareness, openness, communication and motivation.

### **3.2.2.1 Trust**

Trust is defined as “as an expectancy held by an individual or group that the word, promise, verbal, or written statement of another individual or group can be relied on” (Issa & Haddad, 2008). Several professionals (Al-Alawi *et al.*, 2007; Fathi, Eze, & Goh, 2011) have asserted that trust is a key ingredient for the success of knowledge sharing, it has strong influence on the individual to share knowledge, it improves the creation of a good working environment, it promotes network relations, and it reduces conflicts among staff in organisations. The academics in the universities are willing to share knowledge if they trust each other. Management therefore require the existence of trust in order to respond openly and comfortably, when sharing knowledge (Cabrera & Cabrera, 2002).

Trust between co-workers is an extremely essential attribute in organisational culture, which is believed to have a strong influence over knowledge sharing (Al-Alawi *et al.*, 2007). Renzl (2008) explains that trust is regarded as a facilitator of effective knowledge sharing, thus mutual trust and social trust improve the interaction between employees and result in more knowledge sharing. Employees normally fear sharing knowledge due to competition that exists among them and this may result in losing power in the firm. However, when trust exists between individuals, it is not seen as a threat by individuals who want to share knowledge with their colleagues (Fathi *et al.*, 2011). Trust in organisation cannot only influence knowledge sharing; it has been shown to have a strong and robust influence on a variety of organisational phenomena, including job satisfaction, stress, organisational commitment and productivity for growth of an organisation (Renzl, 2008).

In the context of Australia, Fink and Gururajan (2010) found that lack of trust amongst academics in the universities held back knowledge sharing practices. It was established that when academics do not trust senior colleagues with their knowledge sharing of knowledge

will not occur effectively. Kim and Ju (2008) study on attitude towards knowledge sharing in academic institutions in Korea found that trust was not significantly associated with knowledge-sharing among academics.

#### **3.2.2.2 Awareness**

The first stage of knowledge sharing in the universities is to promote awareness if knowledge sharing does not exist. According to Cong and Pandya (2003) the main component for the success of knowledge management is to increase awareness among academics at all levels in the university. The awareness about knowledge sharing is considered as an element that every employee should have including the top management so that they can participate knowing exactly the importance of knowledge sharing. If the knowledge stakeholders are not aware of knowledge sharing, it is difficult to participate in knowledge creation and sharing.

#### **3.2.2.3 Openness**

Openness of communication in organisations helps in improving organisational culture by eliminating bureaucracy and secrecy that hinder knowledge sharing (Ma & Kim, 2005). Individuals with high levels of openness are willing to consider new ideas and unconventional values, and they experience both positive and negative emotions more intensely than individuals who score low on openness. Therefore open people display intellectual curiosity, creativity, flexible thinking, and culture, thus tend to have more positive attitudes towards learning new things and share them with others (Matzler, et. al, 2008).

#### **3.2.3 Technological Factors**

According to Chong (2010) Technology consists of infrastructure of tools, systems, platforms and automated solutions that improve the development, application and distribution of knowledge. Logan (2006) pointed out that organising the knowledge of the organisation and enabling access to it are critical to employee's ability to effectively use knowledge that is scattered across the organisation. Modern technology is usually said to be a good way of creating, organising and making effective knowledge sharing. To create, capture, organise and use new knowledge, the sharing of the existing knowledge needs to be facilitated by incorporating technology (Abouzeedan & Hedner, 2012; Nassuora & Hasan, 2010).

Technology itself is nothing without people who operate, feed information and use the machines. However, Han, Zhou, and Yang (2011) believe that it is necessary to find technical ways to store, disseminate and utilize the knowledge among academics. The use of knowledge management systems to support knowledge creation and sharing activities has become the priority of universities to stay competitive in the global education market. Riege, (2005) pointed out that without technology most knowledge sharing practices would be less effective.

According to Chong, Teh and Tan (2014) the use of Information Technology (IT) has helped academics to communicate, obtain and reuse the knowledge created in learning, teaching, and research which in turn creates new knowledge. Han and Anantatmula (2007) found that the availability and usability of technology have significant influences on knowledge sharing in a large IT organisation setting in Washington DC Metropolitan areas. Issa and Haddad (2008) state that universities are investing in technology to capture and store knowledge so that when a person leaves the university, knowledge will remain behind for future reuse. Because of the importance of knowledge, Hung et al. (2011) observe that knowledge is a critical asset of an organisation; it must be shared and stored using modern technology. Al-Hawamdeh (2003) asserts that leaders in the universities believe that technology is an important enabler of knowledge sharing because it supports communications, collaboration, individual relations management, and providing access to large depositories of knowledge. Connelly and Kelloway (2003) echoed that organisations use different information systems to facilitate knowledge sharing through creating or acquiring knowledge repositories, where employees access and share expertise and experience electronically.

The new technology is widely used by universities and other organisations to facilitate communications. Jashapara (2010) agrees that sharing knowledge using modern technology is inevitable, it stores and presents knowledge easily wherever needed. Individual or groups can share knowledge through, internet, intranet, groupware tools, videoconferencing and e-learning (Gottschalk, 2005). Good technological infrastructure is amongst the significant tools which the university need to consider for supporting knowledge creation and sharing. Technology is able to overcome the barriers of time and space that would otherwise be limiting factors in knowledge and sharing activities (Chua, 2004). Increasingly, Information and Communication Technology (ICT) such as Web 2 is being widely used for knowledge

management. Other ICTs include online databases, intranet, blogs, wikis, social networking, social bookmarking and more.

Sohail and Daud (2009) assert that ICT enhances knowledge sharing by lowering temporal and spatial barriers between knowledge sharers and improving access to knowledge. Chua (2004) adds that the technology overcomes the barriers of time, space and facilitates knowledge transfer between academics in diverse locations hence making knowledge sharing simple and fruitful. This is supported by the study conducted in Australian universities, Fink and Gururajan (2010) which found that use of ICT, and in particular the internet, is generally regarded improves efficiency of knowledge sharing among academics. The use of ICT in the universities must be accompanied by skills development. Fink & Gururajan (2010) established that users were not competent in using modern technology because they lacked ICT skills. In this regard, Syed-Ikhsan and Rowland (2004) noted that effective knowledge management depends on the individual's skills and readiness of employees to share knowledge using ICT.

In the survey conducted at Bangkok University, Wangpipatwong (2009) found that technology availability positively influenced knowledge sharing. The study suggested implementing strong ICT strategy to promote sharing of knowledge effectively. Kim and Ju (2008) established that major universities in South Korea take strong initiative to develop knowledge repositories for the current and future demand for knowledge sharing. In the survey of academic repositories in 13 countries including Australia, Canada, USA, Belgium, France, the UK, Denmark, Norway, Sweden, Finland, Germany, Italy and the Netherlands Van Westrienen and Lynch (2005) established that universities were developing knowledge repositories on campus to facilitate knowledge sharing practices and supporting e-science and e-research among faculty members.

In the context of Nigeria, Anasi, Akpan and Adedokun (2014) established that academics in south-west Nigeria were increasingly utilizing ICT platforms for knowledge-sharing in preference to the traditional platforms. In South Africa, Averweg (2008) reveals that eThekweni municipality aligned intranet in their business, which provides a sound framework to support knowledge sharing. Furthermore he suggested that intranets should be seen as integral part to an organisation's knowledge management strategy tailored to suit and enhances an organisation's knowledge-sharing activities.

Mutula and Van Brakel (2006) in the context of Botswana found that small and medium-sized enterprises (SMEs) used modern technology to share knowledge. However, most applications implemented on the LANs were basic, such as e-mail applications, small databases, Microsoft applications, and product information that were largely for in-house use. Dewah and Mutula (2016) found that in Sub-Saharan Africa ICT was being used to capture and retain knowledge through training, workshop, seminars and apprenticeship. But the use of ICT was being hampered by lack of trained staff in ICT, low level of ICT skills among users, unawareness of potential benefits of ICT and inadequate ICT infrastructure.

Mohannak and Hutchings (2007) found that ICT was essential for knowledge sharing but it could be effectively used without the corresponding cultural and organisational practices. Ryan et al (2010) therefore suggest that the universities must develop a comprehensive ICT infrastructure to facilitate sharing and exchange of knowledge within and outside the universities. In the study conducted in Tanzania, Mtega, Dulle and Ronald (2013) established that ICTs were being used for sharing both explicit and tacit knowledge among academics in the universities.

Web 2.0 is a term that was introduced in 2004 and refers to the second generation of the World Wide Web. Web 2.0 tools allow users to create, describe, post, search, collaborate, share knowledge and communicate online content in various forms, ranging from music and bookmarks to photographs and document (Virkus, 2008). The ranges of new applications make it possible for users to run programs directly in a Web browser this facilitates knowledge sharing among individuals and groups. Cronk (2012) observes that the role of Web 2.0 in knowledge sharing is not only to provide an excellent sharing platform but to assist in the building of social capital which in turn fuels more knowledge sharing. Many successful projects have been reported that emphasize how use of Web 2.0 has unlocked new pathways for knowledge sharing globally.

Garcia-Perez and Ayres (2010) found that there were benefits to be gained from sharing knowledge using Wiki. A study conducted in Saud Arabia at King Abdulaziz University found that Web 2.0 technologies were increasingly used for sharing knowledge between the academics and students. Another study carried out at the International Islamic University Malaysia (IIUM), Usman and Oyefolahan (2014) established that Web 2.0 technologies were

used in learning and sharing knowledge among students. Despite of usage of Web 2.0 the studies showed that its application is still low in other countries, such as in India (Preedip & Kumar, 2011) and Zambia (Banda, 2011). Garcia-Perez and Ayeres (2010) point out that Web 2.0 tools improve the quality of services, collaborations, knowledge sharing and innovations. In Kenya, Gichora and Kwanya (2015) noted use of Web 2.0 tools in sharing knowledge among academic libraries though this was being hindered by infrastructure and technological challenges.

Dulle, Majanja and Cloete (2010) in their survey of Public Universities in Tanzania called for use of technology and adoption of KM policies that would encourage researchers to maximize the use of Web 2.0 to share and disseminate their findings through open access. Yonazi (2011) asserted that knowledge sharing in Tanzania is facilitated by networks but poor connectivity remained the greatest challenge. By using ICT technology it is easy for individuals to share tacit knowledge, which is difficult to be shared in a normal way (Abouzeedan and Hadner, 2012; Zhang and Jasimuddin, 2012).

### **3.2.4 Factors Hindering Knowledge Sharing**

Individual, technological and organisational factors are considered very crucial in the linkage and integration of knowledge sharing in universities. If these factors are not handled properly, they turn out to hamper knowledge sharing practices. Studies conducted in higher educational institutions in Asia indicated that knowledge sharing activities in the academic environment encountered similar barriers that hindered knowledge sharing (Basu & Sengupta, 2007).

#### **3.2.4.1 Organisational Barriers**

Riege (2005) indicates organisational barriers such as lack of organisation culture, structure, leadership and managerial direction, lack of rewards and recognition system negatively affected knowledge sharing. Organisational culture is a major barrier to leveraging intellectual assets (Long & Fahey, 2000) as this reduces internal integration of knowledge assets in the organisation (Solli-Saether, Karlsen, & Oorschot, 2015). In India for example, women in some areas are excluded from inheritance and certain professions, thus hindering them from participating in knowledge sharing (Arunachalam & King, 2005).



In Latin America, Calderon, Spek and Carter (2003) in their survey of good practices in knowledge management in European companies found that knowledge sharing was hampered by culture, leadership and management practices.

Similarly, lack of a formal organisational structure hinders knowledge sharing because it increases the bureaucracy which decreases the efficiency of knowledge sharing practices among employees. Kant and Singh (2008) warn that lack of organisational structure can discourage KM activities which certainly hinder the prospect of knowledge sharing. Suppiah and Sandhu (2011) claim that hierarchical structure is bureaucratic that hampers knowledge sharing. The structure that does not support individuals to communicate vertically is not knowledge sharing friendly.

The lack of management support can be the most critical barrier for successful knowledge sharing (Chong & Choi, 2005). Absence of management support affects employees motivations, formulation of knowledge sharing policy and provisions of facilities used in knowledge sharing. The absence of management support further curtails staff members from effectively participating in knowledge sharing which eventually affects organisational performance. Long and Fahey (2000) point out that 84 percent of knowledge management projects fail due to lack of management support, as a result, knowledge creation and sharing is hampered.

Lack of effective communication between staff and management can also slow down the process of knowledge sharing. When management fails to facilitate communication among employees they create a communication gap which holds back knowledge sharing practices. Riege (2005) asserts that there is no knowledge sharing without communication, people socialize through communication; therefore, lack of communication lowers the level of knowledge sharing which decreases the value of knowledge.

Knowledge sharing is also hindered by lack of motivators such as rewards and incentives. In this regard, Kant and Singh (2008); Yao, Kam and Chan (2007) point out that lack of motivation and reward system discourages people to create, share, and use knowledge. Consequently the organisations can not generate and share knowledge and this leads to failure in competing effectively with the others.

### 3.2.4.2 Individual Barriers

In the process of knowledge sharing individuals serve as knowledge creators, receptors and sharers. Despite the positive influence of individuals in knowledge sharing, they can also negatively influence knowledge sharing as well. Nonaka and Takeuchi (1995) state that individual's generate knowledge by exchanging their ideas and experiences through socialization. But individual factors can hamper generation and sharing of knowledge due to different reasons such as the lack of trust among individuals. In the survey conducted in an American multinational company based in Malaysia, Ling, Sandhu and Jain (2009) found that lack of trust among staff hindered their relationship and social interactions which created the sense of unwillingness to generate and share knowledge. As a result, the culture of hoarding knowledge started to emerge. Probst, Raub and Romhardt (2000) pointed out that trust among employees in many organisations is a problem, when people do not trust each other they hide knowledge. Similarly, fear of loss of power and fear of misuse of individual knowledge can be a barrier for knowledge sharing. Conboy and Morgan (2011) posit that individual fears of exposing their weaknesses through meetings and publications, make individuals feel afraid to share knowledge.

Bock *et al* (2005) pointed out that people may prefer not to share knowledge because of personal gains or lack of motivation. Azudin, Ismail and Taherali (2009) pointed out insufficient motivation results in individuals' failure to create and share knowledge.

Insufficient time is another reason for individuals' failure to generate and share knowledge. Probst, Raub and Romhardt (2000) in this regard asserted that when individuals lack sufficient time they do not engage in knowledge creation and sharing. In the survey conducted in an American multinational company based in Malaysia, Ling, Sandhu and Jain (2009) found that inadequate time was among the barriers hindering knowledge sharing.

Riege (2005) pointed out that lack of awareness about the importance of knowledge sharing hinders knowledge sharing. Riege (2005) further identifies power relations between superiors and subordinates, low level of education, differences in experience levels and age as factor that may hinder knowledge sharing.

### **3.2.4.3 Technology Barriers**

Technology is an enabler for knowledge sharing; if it is not properly designed and managed it becomes a barrier to knowledge sharing. This happens when there is exists lack of technological infrastructure, when technology is complex to use, and lack of skilled staff to design applications, make use of, and also support the technology. Paquette and Desouza (2011) note that lack of common knowledge infrastructure and social network discourage knowledge sharing. In addition, inappropriate technological infrastructures hinders the collection, storage, access, retrieval and sharing of knowledge in time. Kant and Singh (2008) agree that lack of technological infrastructure (TI) is one of the barriers in knowledge sharing in an organisation. Furthermore, complex and non friendly systems create communication gaps which hamper knowledge sharing (Ghobadi & Mathiassen, 2016).

### **3.3 Knowledge Sharing Strategies in the Universities**

Lerro and Schiuma (2013) point out that knowledge sharing strategies are no longer an option in the universities but must be implemented and practiced because the universities are aware that the knowledge is value-addition and is linked to the development and competence of an organisation. Therefore it is essential for university administration to develop enabling strategies on knowledge sharing that create awareness and motivate staff to participate in knowledge sharing practices. To achieve this, individual's need, collaboration, trust, and training are needed to enhance the knowledge sharing among academics and raise the university competitiveness (Mairer, 2004).

In the context of American multinational company based in Malaysia Ling, Sandhu and Jain (2009) found that the most effective method to promote KS was linking it to rewards and performance appraisal that requires employee to show their participation in knowledge sharing within a specified period.

During the 1990's the European countries were seized with promoting the university's role in technology and knowledge sharing. Many European countries consequently introduced reforms and policy initiatives to encourage and improve university technology and knowledge sharing (Messeni, 2011). This strategy enabled a number of universities to change themselves from a traditional research university to modern system of encouraging the activities of their academics to share knowledge (Krabel & Mueller, 2009; Guerrero, Urbano,

Cunningham, & Organ, 2014). The management strategies in promoting knowledge sharing also involved the use of modern technology. This strategy echoed Siemens medical solutions strategy of KnowledgeShare@MED in 2000. This was global initiative that was an integral part of an effective strategy for the purpose of generating, capturing, disseminating and sharing knowledge that is relevant to the organisation's mission (Muller, 2003). The strategy helped Siemens to create and share knowledge within and outside the organisation. This strategy enabled the acquisition and sharing of more specialised knowledge which impressed and attracted the individuals to participate in knowledge sharing. The thrust of Siemens strategy was to collect, share and reuse all knowledge created by the experts all over the world through modern technology. To achieve the strategy Muller (2003) points out that Siemens went further and undertook a number of concrete steps to encourage cooperation in knowledge sharing.

In the context of Australia, Hofstede (2005) found that organisations' managers are normally accessible and rely on employees and teams for their expertise. Both managers and employees are participating in knowledge sharing frequently. In Taiwan, high performing organisations use promotion as the strategy for knowledge sharing. They hold special activities to encourage their employees to share knowledge. The Chief Executive officers (CEO's) are fully involved in the promotion and creating the sharing climate (Hsu, 2006). Besides, employees are involved in the decision making process to make the knowledge sharing practices more vibrant and successful. This strategy makes the employees feel that they are respected and become inclined to knowledge sharing.

Li and Xia (2014) in a study of knowledge sharing in Chinese universities among scholars, found that individuals' knowledge sharing through collaboration resulted in team knowledge and a collaborative atmosphere. The collaborations among the teams in the university strengthened the relationships between departments which facilitated social interactions among academics. Oliveira *et al.* (2015) emphasize that, organisations often organise their employees into teams of two or more individuals that adaptively and dynamically interacts through the specified roles as they work toward knowledge sharing and valued goals of an organisation. Collaborative technologies, such as repositories increase academics access to information and reduced costs (Zakaria, Amelinckx, & Wilemon, 2004). Parek (2009) points out that collaborations in the universities reduce uncertainty from the innovation process; expands universities markets, enables faculty members to access new resources, skills and

keep up with evolution of scientific knowledge as well as create new knowledge. Similarly, Tan (2016) observes that universities are able to support their academic staff in research collaboration and sharing knowledge by allowing them create new theories and establishing new research principles.

Collaboration and team work is a more productive way of sharing knowledge. Some organisations therefore set up groups of people who together, online or in person to help each other by sharing tips, ideas and best practices that encourage other participants to join and share knowledge (UNFPA, 2003; Faul & Kemly, 2004, cited in Ling *et al.*, 2009).

Employment contracts are another strategy which organisation can use to improve knowledge sharing. King and Marks (2008) suggest that organisation can operate informal ways that encourage knowledge sharing, by using employment contracts which specify that knowledge that is collected or created in the course of work belongs to the organisation, and counts towards the promotion of employees. The study of Cheng, Ho and Lau (2009) found that the management of Multimedia University Malaysia had made it compulsory for each university's employee to contribute to ShareNet and their contribution factored in their year-end performance evaluation. Online open-network sharing through ShareNet was used to link both academics and non-academics at the university.

Kaser and Miles (2002) challenge the contract strategy of promoting knowledge sharing saying that sharing attitude activities have to be voluntary and cannot be forced. On the other hand, Bernstein, Kok and Meca (2015) suggest that the organisation should establish relationships with individuals to create knowledge sharing networks. The network implemented as a series of meetings among individuals, will facilitate the exchange of best practices among individuals with the expectation that individuals will be willing to share knowledge voluntarily rather than involuntarily.

The universities also use motivation as a strategy to encourage academicians to share knowledge. Gururajan and Fink (2010) found motivation as one of the strategies that stimulate academics to share knowledge. In addition, compensation to senior academics for giving their time and effort is seen as another important pre-requisite for knowledge sharing. The study by Wang and Noe (2010) found that lack of incentives was a major barrier to knowledge creation and sharing. Knowledge creators expect returns from creating and

sharing knowledge and if there are no incentives some academicians may hoard their knowledge.

Therefore the Universities as dynamic organisations must cultivate favourable knowledge sharing atmosphere. Suppiah and Sandhu (2011) recommended that managers should implement policies, provide rewards and recognition to motivate staff to share knowledge. Besides, they recommended the use of technology such as video conferencing, electronic forums, social media such as twitter and Face book to maximise the sharing of knowledge. The implementation of policies on knowledge sharing should involve use of formal supervisory controls or more general organisational support. Supervisory control involves efforts by management to increase the likelihood that individuals will act in ways that will result in the achievement of organisational objectives. Organisational support will include social exchange from an individual to an organisation and vice versa. It is used to explain how individuals can become committed and contribute to their organisation (King & Marks, 2008).

In some universities in Africa, ICTs are being reflected in university strategic plans to facilitate knowledge sharing internally and externally. The Universities that have integrated ICT in their strategic plans include among others Eduardo Mondlane University (Mozambique), University of Western Cape (South Africa), Makerere University (Uganda), Obafemi Awolowo University (Nigeria), and University of Dar es Salaam (Tanzania) (Beebe, 2004).

Another strategy that is being deployed to enhance knowledge in Africa is NetTel@Africa. This is a transnational network for capacity building and knowledge sharing. The overall goal of NetTel@Africa is to make the provision of ICT and telecommunications services both more efficient and available to all African citizens. It also builds the capacities of ICT partners including academic institutions. Having started with the Universities of Botswana, Dar es Salaam, Zambia, and the Universities of Fort Hare, Western Cape and Witwatersrand in South Africa, the network now includes Makerere University (Uganda); Jos, Lagos, Nigeria at Nuke, and Obafemi Awolowo in Nigeria; Eduardo Mondlane University (Mozambique); National University of Rwanda; Jomo Kenyatta University (Kenya); and Nairobi University (Kenya). The strategy aims at empowering universities to use ICT for knowledge sharing among academics in African universities (Beebe, 2004).

### **3.4 Leveraging Knowledge Assets in Teaching, Research and Consultancy**

Any university's performance, credibility and competency depend on the research, publications and consultancies conducted by the academics. The university are able to compete in education market if the academics leverage knowledge asset effectively to enhance academic performance in their universities. Vignoni and Oppi (2015) pointed out that the universities are characterised by constantly generating new knowledge through research activities, supervision sessions, informal and personal contacts, writing of books, journals articles, conferences, and training.

Conducting research is aimed at generating intellectual assets that can be organised and made available for easy access. Henkel (2005) contends that such research raise the image and competitiveness of the institutions. To properly leverage intellectual assets, generated by the universities, such knowledge must be organised and broad access to the knowledge facilitated (Logan, 2006).

The study conducted in Japan Advanced Institute of Science and Technology (JAIST), by Islam *et al.* (2013) established that the capability of sharing knowledge enhances research work significantly; individuals are stimulated to share knowledge to enhance learning and teaching activities. In this regard Chong, Teh and Tan (2014) suggested that active and voluntarily sharing of knowledge is an essential element for successful learning and generating a conducive learning environment at the university.

Jacob, Xiong, & Ye (2015) assert that for higher education to enhance professional development and academic excellence academics should dedicate their time to support learning, teaching, research and consultancy. Islam *et al.*, (2013) in the context of knowledge sharing practices at the Japan advanced institute of science and technology observed that doctoral students are sharing knowledge to gain ideas of research topics, gain fundamental research skills, and exchange and share the merits and demerits of different research methodologies.

Martin and Marion (2005) observed that universities' work is the basis for innovation through research and consultancy where new ideas and knowledge is generated and shared. Through research and consultancy the scholars and researchers create new knowledge and share it with others which enabling the university to improve its academic performance and compete with other universities both locally and globally. Boyd and Smith (2016) therefore advocate for academics in the universities to focus on teaching, research and consultancies services for academic work and improvement of quality of education.

In Australia, Fink and Gururajan (2010) found that academics' were leveraging knowledge assets by engaging in teaching and doing research as their core functions. In recognising the importance of the knowledge assets, in Qatar, Abduljawad (2015) reported that the country is providing 2.8% of the Gross Domestic product (GDP) to research and development in higher education in recognition of the importance of research and knowledge production for socio-economic development.

Weir (2007) in contrast reports that in the Middle East and North Africa (MENA) academics with doctoral qualifications have no pressure to publish, as their promotion is based on seniority rather than output. They are not publishing like their fellow counterparts in Europe and America. In this regard MENA academics are not leveraging knowledge assets as their core functions of research and consultancy. Furthermore, because they are not under any obligation to publish knowledge sharing practices in MENA is not valuable. Nevertheless the world over creation of new knowledge through research and consultancy is now regard as essential in the academic's research life.

Perkmann (2013) points out that in US, Europe and India, academics are conducting studies, generating and publishing. Perkmann underscores the importance of research and publication as a way of sharing and leveraging the knowledge asset. Tong, Tak & Wong (2014) agree that, to share knowledge internally and externally for academics is imperative because knowledge is an intellectual asset, if shared in a proper way, knowledge strengthens and develops a university. Prusak and Cranefield (2011) point out that academics' knowledge is a large part of what makes them unique and give them an edge. Therefore leveraging knowledge remains important for the sustainability of academics career because this is linked to development of expertise (Lerro & Schiuma, 2013). Therefore, Islam *et al.* (2013)



recommend the institutes/universities to be encouraged to promote their research activities through sharing knowledge among the researchers, students and faculty members.

In Tanzania, the universities prioritise research as a way of generating knowledge as reflected in their missions and visions. For example Mzumbe University (2015) states that the university provides skills through training, research. SAUT (2015) on the other hand prides itself as providing a high quality of education and research. Similarly, the mission of Sokoine University of Agriculture (2015) is to promote development through training, research and delivery of services, as well as to improve and expand research output. The vision of University of Iringa (2015) is to be the leading dynamic and entrepreneurial institution of higher learning that engages itself fully with the community, through teaching, research and outreach, for sustainable development. Despite the prominence of research in the missions and visions of the universities in Tanzania, Gale (2011) revealed that academics put more emphasis on teaching rather than conducting research, consultancies, writing and publishing. For example study conducted in Tanzania at Mbeya University of Science and Technology by Katambara (2014) found that there are limited number of research, publications and consultancy activities at the university. The findings show that only 23.3% staffs publish whereas 76.3% don't publish. Though the focus of academics on teaching is one of the reasons for low publication other reasons advanced include lack of knowledge and skills, lack of funds to conduct research, lack of support from top management; inadequate time allocated for research.

### **3.5 Attitude of Academics Towards Knowledge Sharing**

Generally, sharing of knowledge is a social activity whereby communication between person to person, people to group or group to group takes place. As a social activity, knowledge sharing success depends on relationship, interactions, trust and attitudes among participants (Cheng *et al.*, 2009). Previous studies have indicated that an individual's attitude and control over knowledge sharing intention is an important predictor of knowledge sharing (Bock *et al.*, 2005; Goh & Sandhu, 2013; Kim & Lee, 2006). Without individual's sharing attitude, knowledge cannot be created and shared because no one will be interested in knowledge management practices. Allameh *et al.* (2012) found that knowledge sharing attitude is based on individual behavior, as people do not accept the value of sharing knowledge unless they think it is important.

The knowledge sharing attitudes involve the individual's willingness to share. The individuals, who are willing to share their knowledge, expect others to contribute as well, hence to attain a balance between offerings and collecting knowledge, it is give and receive business (Nahapiet & Ghoshal, 1998a). Goh and Sandhu (2013) recommend to private university administrators to place greater emphasis on encouraging academics to share their knowledge in order to build positive attitude towards knowledge sharing. In this regard, the university can organise activities and events that can positively motivate and increase the academics knowledge sharing attitude. The activities and events may include organising training, gatherings, workshop and internal sharing of research results to build up their sharing attitudes. The positive attitude of individuals towards knowledge sharing is derived from the social value. Thus the universities need to invest in social value based on mutuality, trust, and respect that could give long term benefits such as corporate wellbeing and innovativeness (Guzman & Wilson, 2005).

In Malaysia, Goh and Sandhu (2013) confirm that academics have positive attitude towards knowledge sharing in public and private universities. The behavioral control was identified as the factor having the strongest influence to encourage positive attitudes towards sharing knowledge. At the University Technology of Malaysia (UTM) Iqbal *et al* (2011) established that self-efficacy and social networks help in developing the knowledge sharing attitude which has a positive relationship with knowledge sharing intentions. The study results further indicated that universities support development of social networks as means to enhance sharing of knowledge among academics.

Fink and Gugurajan (2010) found that the academics in Australian universities showed positive attitude, and their willingness to share personal knowledge in a social environment where there is trust and openness. Furthermore the results showed that academics interacted and socialized in the environment of trusting each other. Trust among academics develops positive attitude to share knowledge regardless of the status of the person. Iqbal *et al* (2011) at University Teknologi Malaysia found that, trust has a positive link in developing knowledge sharing intentions and innovating capacity of the university.

According to the Unified Theory of Acceptance and Use of Technology (UTAUT), employees' attitudes towards knowledge sharing are dependent on intrinsic and extrinsic motivation. Intrinsic motivation, is the perception that staff will share knowledge because a

person expects to obtain valuable outcomes; it includes expected reward and reciprocal benefit (Alotaibi, Crowder, & Willis, 2014). Extrinsic motivation necessitates members of staff to share knowledge because they believe that they have valuable information that should be shared including self-efficiency, work experience and enjoying helping others, especially if they are working in a group (Alotaibi *et al.*, 2014; Emmerik & Jawahar, 2005). In support of UTAUT, studies on knowledge sharing among academics in Malaysia (Jeon, Kim, & Koh, 2011; Tan & Ramayah, 2014) affirm that extrinsic and intrinsic motivators can directly affect attitude towards knowledge sharing.

Lin (2007) posits that few studies show that academics' motivation increase knowledge sharing attitude and that motivation give staff encouragement to engage in knowledge sharing activities. It is assumed that staffs who contribute their knowledge have some positive attitude on knowledge sharing. Naturally human tend to offer their knowledge when they expect reward, such as extra payment or reciprocal benefit. Bock *et al.* (2005) postulated that an individual's attitude towards sharing knowledge is driven by anticipated reciprocal relationships and trust which are mostly found in social interactions and not by motivation. This implies that motivation and rewards depends on the environment in the university where knowledge sharing is practiced. Hislop (2003) found that the most important factor in knowledge sharing is building attitude to share knowledge without demanding motivation.

Despite of the importance of positive attitude in knowledge sharing, Schwart and Te'eni (2011:919) revealed that some organisations had taken the view that there is a danger in giving away secrets through sharing knowledge, which contributes to negative attitude towards knowledge sharing among academics. The academics may also fear a loss of superiority and knowledge ownership after sharing their personal knowledge (Bartol & Srivastava, 2002). In contrast others believe that there are great potential benefits in disseminating knowledge within organisation and perhaps beyond its boundaries (King, 2006). Therefore a positive attitude towards knowledge sharing is necessary for academics to share their most valuable knowledge. Oliveira *et al* (2015) therefore assert that knowledge sharing through socialization exposes academics to new knowledge and build positive attitude towards knowledge sharing.

According to Chung *et al* (2015) studies has validated that an individual's tendency towards knowledge sharing can be improved when they experience positive emotions such as

enjoyment, delight and willingness to share what they have. The study by Jarvenpaa and Staples (2000) established that a willingness to share is positively related to profitability and productivity of the university's knowledge. Likewise, Lin (2007) declares that people willing to share their knowledge will expect others to reciprocate in the same way for mutual benefit and achieving organisational goals. Ismail, Nor and Marjani (2009) found that the willingness and eagerness of individuals to share knowledge is crucial to organisations, as knowledge sharing is not only simple information sharing but is also about stimulating the exchange of thoughts, experiences and ideas amongst individuals within an organisation. In this regard, technology is needed because it motivates and encourages individuals to participate in knowledge sharing as it facilitates creation, storage, dissemination and sharing of the knowledge (Alotaibi *et al.*, 2014). King (2006) admits that there is need for strong commitment by academics and university management towards sharing knowledge using modern technology (Tong, Tak & Wong, 2014).

### **3.6 Summary of Literature Review**

The literature reviewed was carefully selected informed by the research questions and relevant variables from the theoretical model that underpinned the study. The literature reviewed sources from journal articles, books, conference proceedings, indexes and abstracts. The existing literature has identified three main factors that facilitate knowledge sharing practices that include organisational factors such as organisational culture, organisational structure, organisational communication, management support, strategic planning and rewards systems. The other factor facilitating knowledge sharing as revealed by the literature reviewed is knowledge management and sharing policies to guide knowledge sharing activities in the organisation. However, the literature showed that the universities surveyed lacked knowledge management and sharing policies and as a result, knowledge sharing was not effectively promoted in the organisations.

The literature further showed that Individual factors that include trust, personality, awareness and openness influenced knowledge sharing. Technology is another factor reviewed in the literature.

The literature further revealed that knowledge sharing strategies that include creating awareness and motivating academics to create, use and share knowledge were needed to

ensure effective and efficient sharing practices in the universities. Such strategies would include deployment of ICT infrastructure, collaborations with other universities, incentives and rewards. The literature revealed that the knowledge production and sharing was constrained by among other factors heavy teaching workload that left academics with limited time to create and share knowledge, inadequate ICT infrastructure, lack of enabling policies, lack of skilled manpower, hoarding of knowledge for personal gains. The attitudes of academics towards knowledge sharing were largely positive.

The literature reviewed revealed limited emphasis on policy, education level and positions held by academics and how these affected knowledge sharing. Most literature on knowledge sharing was found to be concentrated in the business sectors and only limited researches exist in academic environments including universities. Besides, most extant literature is found in developed countries in North America and Europe as well in transitioning economies in Asia. Africa, Tanzania in particular has hardly undertaken major research in knowledge sharing among academics in university environments. However, private universities left behind.

## **CHAPTER FOUR**

### **RESEARCH METHODOLOGY**

#### **4.1 Introduction**

This chapter is organized thematically as follows: research paradigm, research methods, research design, population of study, sampling procedures, data collection procedures, data analysis strategies, validity and reliability of data collection instruments, ethical considerations and summary.

#### **4.2 Research Paradigm**

Bryman (2012) states that research paradigm is a cluster of beliefs of how a particular discipline influences what should be studied, how research should be done and how results should be interpreted to get a report. Shkedi (2005) is of the view that a research paradigm provides the structure in which research takes place by presenting overarching and interconnected assumptions about the nature of reality. Maykut and Morehouse (2005:5) emphasise that one must make assumptions, for example, about the nature of reality, because anything that a researcher might do to test what reality is, must be based on some understanding of that reality. Johnson and Christensen (2012:31) point out that a research paradigm is simply a perspective about research held by a community of researchers that is based on a set of shared assumptions, concepts, values and practices. (Brink *et al.*, 2012:24) elaborate that research paradigms are characterised by ontology, epistemology and methodology.

Ontology is a branch of philosophy that deals with the nature of reality (Guba & Lincoln, 1994:108). Epistemology on the other hand, is a branch of philosophy that deals with the origin, nature and limits of human knowledge; it is the relationship between the researcher and the phenomenon being researched (Guba & Lincoln, 1994:108). The methodology refers to the particular way of knowing about the reality or how the inquirer should go about finding out knowledge and methods to be used. Shkedi (2005:6) argues that methodology is a more practical branch of philosophy that deals with methods, systems and rules for the conduct of

inquiry. Therefore methodology involves the process of how the researcher goes about finding out things. The methodology chosen to underpin a research problem depends on the three major paradigms commonly used in social sciences research namely; positivism, interpretive and post positivism. The researcher is free to choose and use one of the paradigms depending on the nature of the study.

#### **4.2.1 Positivist Paradigm**

“Positivism refers to epistemological doctrine that posits that physical and social reality is independent of those who observe the reality” (Gall, Gall & Borg, 2007:16). Brink, Walt and Van Rensburg (2012:25) add that positivism represents a systematic way of doing research that emphasises the importance of observable facts. The word positivism was first coined by Auguste Comte as early as the 1830s. Comte believed that observation and reason are the best means of understanding human behaviour. He added that true knowledge is supported by experience of senses and can be obtained by observation and experiment (Antwi & Hamza, 2015). Moreover, Comte perceived positivism as being synonymous with science or with observable facts Maykut and Morehouse (2005:4) had the views that positivism has come to mean objective inquiry based on measurable variables and provable propositions.

Positivism research usually begins with hypothesis, which is then tested and verified using statistical mechanism and structured experimentation to prove the reality. Gall, Gall and Borg (2005:14) contend that positivists view the real world as being out there and that is available for study through scientific means. Pashaeizad (2009:9) asserts that positivist paradigm shares philosophical foundation and is consistent with quantitative methodology which is also based on measurable variable and uses statistical mechanism.

Daymon and Holloway (2011:101) assert that the aim of research which is grounded in a positivist epistemology is to uncover universal laws and give an objective picture of the world. Positivists take the laws, rules and theories that exist and apply them to a number of phenomena, people and settings.

#### 4.2.2 Interpretive Paradigm

Interpretive paradigm is an approach to knowledge that emphasizes the importance of insiders' viewpoints to understanding social reality (Brink *et al.*, 2012:25). The interpretive approach can be traced back to Edmund Husserl's philosophy of phenomenology and the Germany philosopher Wilhem Dilthey's philosophy of hermeneutics. Phenomenologist's use human thinking, to perceive, describes and understands human experience. From phenomenological perspective, truth lies within the human experience and is therefore multiple. Brink, Walt & Van Rensburg added that hermeneutics involves a reading and interpretation of human text; the hermeneutics claim that there is no objective reality, and therefore no possibility of developing correct knowledge about reality.

Chilisa and Preece (2005:28) observe that interpretations occur within a tradition, space, time and specific situation. Phenomenology and hermeneutics thus largely inform assumptions on the nature of reality, knowledge and values in the interpretive paradigm. The interpretivists challenge that there is no external reality until it is constructed socially by observers through interpretation (Turyasingura, 2011). According to Gall, Gall and Borg (2005:14) aspects of human environment are constructed by the individuals who participate in the environment. Social reality has no existence apart from the meanings that individuals construct for them. Daymon and Holloway (2011:103) note that interpretivists do not seek to predict behaviour or affirm laws instead they attempt to uncover the meanings by which people understand their own experiences and behaviors.

Thus, interpretive paradigm seeks to expose understandings of human behavior and actions, attitudes that the researcher needs to understand in order to maximize the potential of the research approach (Mayoh & Onwuegbuzie, 2015), understand people's experiences as well (Chilisa & Preece, 2005:29). Creswell and Clark (2011:40) assert that in interpretive approach the respondents provide their understandings, they speak from meanings shaped by social interactions with others, thus a research is shaped from individual perspective to broad patterns and eventually to build broader understanding and generate a theory interconnecting the themes.

The Acumen Insights (2009) state that by adopting interpretive stance in a study, a researcher can potentially dig deeper to explore the taken for granted assumptions of the



social world, which are concerned with the meanings that research actors attach to social phenomena. According to Pearson, Vaughan and FirtzGerald (2005) interpretivists assume that the meaning of events and feelings to an individual person is valid data. The paradigm does not use objective quantifiable methods to collect data, but involves listening to people, watching what they do and using human imagination and understanding of participants and then interpreting their meanings. Weaver and Olson (2006) affirm that interpretive paradigm shares philosophical foundations and consistent with qualitative approach which seeks to investigate behaviors', attitudes and understanding of people. Both interpretive and qualitative support the views that there are many truths and multiple realities. The current study focuses on organisation culture, individual's attitudes, perception, intention to share knowledge, individuals reward systems and more. However the interpretive paradigm on its own is not appropriate for this study because it is largely based on qualitative approach alone.

In practice, it is difficult to undertake research at one end of the spectrum; positivist and interpretive have different ways of seeing the world, none of the paradigms is considered to be superior to the other. Therefore, to accommodate that situation it is important to think of the use of two paradigms (positivist and interpretive) to investigate a phenomenon, in this way, the need of post positivist paradigm in this study comes in.

#### **4.2.3 Post Positivist Paradigm**

The post positivist paradigm combines both positivist and interpretive paradigms; it accepts that all discoveries are a responsibility of the researcher to demonstrate objectivity during the discovery process (Pickard, 2013). Weaver and Olson (2006) pointed out that post positivism has emerged in response to the realisation that reality can never be completely known and that attempt to measure is limited to human comprehension. Consequently, methodological dualism in the use of qualitative and quantitative approaches is an accepted practice in a post positivist study.

Post positivist paradigm is considered a critical realism, where the reality is viewed as complex and need to be investigated by multiple measures as none of methods is best. Turyasingura (2011) comments that, the realisation that neither of the paradigms can best explain reality to perfection, has given rise to a new thinking that has been labelled the post-positivism paradigm. Post positivism paradigm situates itself between interpretative and

positivism, which help the researcher to use both approaches in a single study (Wiewiora, 2013).

Therefore, this study adopted post positivist paradigm so as to understand multiple participants' meanings, attitudes and to measure variables and generalize findings. The approach was used to uncover the true reality of the status of knowledge sharing among academics in selected universities in Tanzania. A number of studies have used post positivist paradigm to investigate knowledge sharing in academic institutions or in other organisations. These studies include those of Wiewiora (2013); Turyasingura (2011); Van Vuuren, (2011); and Fullwood (2014) among others.

The importance of research paradigm in a study is to help in determining research approaches to be used in a study, such as qualitative, quantitative or both (Chilisa & Preece, 2005:4). This in turn influences the method to be used in data collection such as questionnaire, interview, observation or focus group discussion.

### **4.3 Research Approaches**

There are three main approaches to research; quantitative, qualitative and mixed methods. This study adopted mixed research method which incorporates quantitative and qualitative approaches (Johnson & Christensen, 2012).

#### **4.3.1 Quantitative Approach**

Tracy and Schutt (2012:4) define quantitative approach as research method that uses measurement and statistics to transform empirical data into numbers and to develop mathematical models that quantify behaviour. In this approach, Ivankova and Creswell (2009:137) assert that the researchers gather numeric data and objectively analyse them using a variety of statistical techniques such as SPSS, and let the numeric results prove or disprove a hypothesis so that those results can be generalized from a sample to a larger population. Buckley and Giannakopoulos (2009) added that quantitative approach collect and analyse statistical data and make inferences.

According to Marvasti (2004:7) quantitative research involves the use of methodological techniques that represent the human experience in numerical categories, sometimes referred to as statistics. In the same way Vanderstoep and Johnston (2009:165) submit that a quantitative research perspective assumes that knowledge is “out there” to be discovered and that there is a physical, knowable reality that can be observed by the researcher. The reality can be taken apart and its parts broadly examined. To examine the reality the questionnaires are used to gather data.

In quantitative research, the questionnaire is based on closed ended questions to facilitate coding and use of statistical software for data analysis. In this approach the questions asked are about the relationship that exist between two or more variables to prove or disapprove the hypothesis (Johnson & Christensen, 2012). The quantitative researchers believe that qualitative data can play an important role in quantitative research. Similarly, qualitative researchers understand that reporting only qualitative participant views of a few individuals may not permit generalising the findings to many individuals (Pashaeizad, 2009:14). Using more than one approach brings multiple forms of evidence to document and inform the research problems. The quantitative approach shares its philosophical foundation with the positivist paradigm (Weaver & Olson, 2006). The approach alone is not suitable for this study because it deals with statistical methods only.

#### **4.3.2 Qualitative Approach**

According to Tracy and Schutt (2012:4) qualitative approach involves the collection, analysis and interpretation of interview, participant’s observation and document analysis in order to understand and describe the meaning, relationships and patterns, the approach focuses on the social and cultural construction of meaning. Creswell (2014:4) defines it as exploring and understanding the meaning individuals attribute to a human problem. Omar (2015) asserts that qualitative approach inquires into people’s lives, experiences, behaviors, and the stories and meanings individuals ascribe to them. It can also examine organisational functioning, relationships between individuals and groups, and social environments.

Buckley and Giannakopoulos (2009) point out that qualitative approaches establish the perceptions and experiences of the academics towards the sharing of knowledge among themselves and provide a deeper understanding of respondent's interactions. In this regard,

Vanderstoep and Johnston (2009:166) state that in a qualitative study knowledge is not “out there”, knowledge is constructed through communication and interaction within the perceptions and interpretations of people. Vanderstoep and Johnston pointed that a qualitative perspective assumes that a researcher cannot analyze and understand an entity by analysis of its parts; rather, a researcher can examine the larger context in which people and knowledge function.

In this approach, the researchers try to understand participants’ experiences with the central phenomenon in a natural setting, using research approaches such as survey or case study. The researchers collect words (text, such as interviews or observation notes), and images about the phenomenon of the study. Without predetermined hypotheses or ideas the researchers analyze the data for common themes in order to allow multiple interpretations of participants’ individual experiences.

This view of knowledge with a qualitative approach is similar to interpretative paradigm. Thus, qualitative approach shares its philosophical foundation with the interpretative paradigm (Weaver & Olson, 2006). Daymon and Holloway (2011:10) pointed out that despite its strengths, qualitative enquiry is not without its limitations; quantitative researchers accuse qualitative studies of being too generalised and subjective, it is not easy to replicate the findings. Andrew, Pedersen and McEvoy, (2011:46) noted that qualitative research collect typically rich and subjective data, often using open ended questions. Despite advantages of qualitative approach, the approach was not used in this study because of the large number of the target population.

#### **4.3.3 Mixed Research Methods**

There is consensus among researchers that quantitative and qualitative research can complement each other, the researchers’ trust that the combinations of quantitative and qualitative in a single study provide richer insights and more understanding of a phenomenon (Gall *et al.*, 2007:32). The combination of two approaches is known as mixed research methods (Ngulube, 2010). The concept of mixing different methods originated in 1959 when Campbell and Fisk used multi methods to study validity of psychological traits (Creswell, 2009:30). The researchers recognising that all research methods have limitations, they felt that biases inbuilt in any single method could neutralize or cancel the biases of other

methods, therefore triangulating data sources, a means for seeking convergence across qualitative and quantitative methods was born (Creswell, 2014:15). By the early 1990s, the idea of mixing methods moved from seeking convergence to actually integrating the quantitative and qualitative data in the same study (Creswell, 2009:31). The term mixed methods involves integration of qualitative and quantitative research Creswell (2014:14) in same way Denscombe (2007) pointed out that it is a method applied to research that combines alternative approaches within a single study.

Pashaeizad (2009:11) explains that mixed methods research is concerned with the processes and procedures for collecting, analyzing and inferring both quantitative and qualitative data in a single study or in sequential studies. At its simplest, a mixed methods strategy is one that uses both qualitative and quantitative methods which provides detailed data on the problem being investigated. Mixed method differs from triangulation. According to Cohen, Manion and Morrison (2007:141) triangulation is the use of two or more methods of data collection in a study. Ivankova & Creswell (2009:137) emphasises mixed methods as a procedure for collecting, analyzing, and mixing quantitative and qualitative data at some stage of the research process within a single study in order to understand a research problem thoroughly. Mixed methods can occur during data collection, data analysis or interpretation. Creswell (2003:17) suggests that it is useful to consider the full range of possibilities for data collection and to organise these methods by their degree of predetermined nature, their use of closed-ended versus open-ended questioning, and their focus for numeric versus non-numeric data analysis.

This study therefore employed mixed research method. The reasons of using mixed method in this study include the fact that, it provided more comprehensive evidence for studying a research problem than either quantitative or qualitative research alone could have achieved. Moreover, mixed method is useful as the weaknesses that can be encountered by using one method in the study can be offset by the other. Creswell and Garrett (2008) recognise and support the use of the two methods to study one phenomenon. They assert that bringing together both quantitative and qualitative research benefits from the strengths of both approaches, leading to a better understanding of research problems than either approach alone. Creswell and Clark (2011:12) pointed out that mixed methods encourage the use of multiple worldviews or paradigm (beliefs and values); also the methods help to answer questions that cannot be answered by qualitative and quantitative approach alone.

Halcomb and Andrew (2009:52) state that mixed method is used for the purpose of confirmation, complementarity, initiation, development, and expansion of the findings. The combination of quantitative and qualitative approaches in a single study allows for several ways to mix results from different data analysis, these contain corroboration and elaboration. By using mixed methods the study expected to meet and increasing the validity of findings. Complementarity is commonly used in studies where the dominant data collection method is quantitative and qualitative data are used to explain or expand the quantitative findings and vice versa (Halcomb & Andrew, 2009:53). For the above reasons this study applied mixed methods to investigate the status of knowledge sharing in selected universities in Tanzania. Using mixed methods facilitated the collection of data on the feelings, experience, and attitudes of respondents about how knowledge sharing among academics. Mixed method was also used in data collection and data analysis. The survey questionnaire was used to collect both quantitative and qualitative data at the same time while interview was used to collect qualitative data only. According to Bryman (2008:90) mixed method can be combined at different stages of the research process such as formulation of research questions, sampling, data collection and analysis.

The importance of mixed method is confirmed by a growing number of studies conducted by different scholars who have used this approach who include (Al-Alawi *et al.*, 2007; Averweg, 2008; Fullwood, 2014; Hossein, Bathaei & Mohammadzadeh, 2014; Ismail, 2012; Lwoga, Ngulube & Stilwell, 2010; Mavodza & Ngulube, 2012; Mayekiso, 2013; Meese, 2011; Retzer, 2010; Ruth, Given & Forcier, 2014; Simeonova, 2014; Yeo & Gold, 2014).

#### **4.4 Research Design**

The research design is the conceptual procedure within which research is conducted (Melam, n.d.). It constitutes the blue print for the collection, measurement and analysis of the data (Kothari, 2006). Marvasti (2004) observes that research design refers to the steps that researchers follow to complete their study from start to finish. The research design depends on the nature of the study, collection tool and the type of data to be collected (Andrew *et al.*, 2011:48).

There are different research designs that are used in social sciences research that include but are not limited to action, evaluation, and survey research designs (Vogt, Gardner & Haeffele, 2012). Action research focuses on solving a particular local problem that experts' face in an organisation (Johnson & Christensen, 2012:11). In this regard, the research is conducted by members of the organisation in their own setting to change own environment. This design is not suited for this study because as was pointed out in chapter one, the study is undertaken for academic purposes by the researcher who is external to the organisations. Evaluation research on the other hand involves investigations, the implementation, effectiveness and impacts of social programs (Johnson & Christensen, 2012:10). This research design is not suited to this study because the study is not evaluating the existing programs.

This study adopted survey design to investigate the status of knowledge sharing in the selected universities in Tanzania. Survey design provides a quantitative description of trends, attitudes, or opinions of a population by studying a sample of the population. It includes cross-sectional and longitudinal studies using questionnaires or structured interviews for data collection (Creswell, 2009:29). Similarly, De Vaus (2004:5) argues that the data grid required for survey research can be filled in using a variety of data collection such as questionnaire and interview as will be used in the study.

The survey is commonly used to determine the present status of a given phenomenon. It is also concerned with naturally occurring variables in natural settings (Connaway & Powell, 2010). The survey research makes use of a representative sample, aims to gather and analyse information by questioning individuals who are either representative of the research population or are the entire research population and uses the results to generalise about the population as a whole (Guthrie, 2010).

In the current study the survey design focused on obtaining information regarding the activities, beliefs, preferences, and attitudes of academics, deans and librarians. In addition, the survey was used to gather data with the intention of describing the nature of existing conditions and determining the relationships that exist between academics and the universities. Denzin (1989) opines that survey research can be conducted from both quantitative and qualitative perspectives where the results are expected to be generalised. Moreover, survey design is appropriate for the current study because it is consistent with post

positivism paradigm and also with mixed method approach which was employed by the study.

A growing list of related studies have used survey design, Jolaei *et al* (2014) to study factors affecting knowledge sharing intention among academic staff in Malaysia. Fullwood, Rowley and Delbridge (2013) used survey design to study knowledge sharing amongst academics in UK universities. Lawal (2014) studied Knowledge sharing among academic staff in Nigerian university of agriculture; the study examined the extent to which academic staff are involved in knowledge sharing for their academic activities. Casmir, Lee and Loon (2012) studied the influence of trust and commitment on knowledge sharing.

Similar study conducted by Fari and Ocholla (2015) used survey design to investigate information and knowledge sharing among academics in selected universities in Nigeria and South Africa. Other studies including Saenz, Aramburu and Blanco (2012) investigated knowledge sharing and innovation in Spanish and Colombian high-tech firms. Rahman (2011) who studied on knowledge sharing practices in Malaysia's health institutes used survey research design. Lin (2007) examined the influence of individual factors, organisational factors (top management support and organisational rewards) and technology factors (information and communication technology use) on knowledge sharing processes from 50 large organisation in Taiwan. Other studies include those of Han and Anantatmula (2007), Van den Hooff and Huysman (2009) , Fong, *et.al* (2011) and Issa and Haddad (2008).

#### **4.5 Population of Study**

The population is total group from or about which certain information is required to be ascertained (Banerjee & Chaudhury, 2010). According to Babbie (2010:116) the population as a group (usually of people) consists of similar characteristics about whom the researcher wants to draw conclusions. Fraenkel and Wallen (2009:90) explained that population comprises all the members of a particular group who are of interest to the researcher. Population comprises individuals with certain particular uniqueness. Babbie added that if the population is big the researcher is never able to study all the members of the population that interests him, therefore, the researcher selects a sample from the population based on formula or tables provided by other scholars. The study population comprised 1230 academics, 41



librarians and 20 deans of faculties from four universities namely: St Augustine University of Tanzania (SAUT), Sokoine university of Agriculture (SUA), Mzumbe University (MU) and University of Iringa (UoI)

Table 2 below shows relative distribution of the population in the institutions that were studied.

Table 2: Relative populations of universities under study

<b>University</b>	<b>Academics</b>	<b>Librarians</b>	<b>Deans of faculties</b>
St Augustine University of Tanzania	150	6	5
Sokoine University of Agriculture	700	16	4
Mzumbe University	260	12	5
University of Iringa	120	7	6
<b>TOTAL</b>	1230	41	20

(Source: SAUT- Public Relations Officer, SUA- Librarian, MU- Librarian, and UoI- Librarian)

The choice of the respondents was based on a number of factors. For example, librarians play an important role in the collection, processing, storage and dissemination of knowledge for research, teaching and engagement. Hayes and Kent (2010:124) add that librarians have played a central role in the mission of universities as custodians of information and knowledge. They identify, organize, describe and facilitate access to knowledge.

For the purpose of this study a librarian is an individual who has obtained bachelor or master's degree in library, information science, librarianship or information studies (Reves, 2007). Moreover, the librarians are involved in the acquisition, arrangement, storage and provision of reader services. They also responsible for enabling borrowing, knowledge dissemination and sharing among users (Southern Louisiana University, 2014).

The deans on the other hand play central role in knowledge creation, sharing and dissemination in the universities. They are middle management officers who administer all activities in the faculty, supervise heads of department, academics and build a favorable environment for knowledge creation and sharing in their faculties. They also play liaison role within and outside the faculty. In addition they provide a critical link between University senior management, the faculty and the academic departments. They also foresee knowledge sharing activities in their faculties as well. Deans of faculties furthermore, are involved in policy making in their institutions (Rhodes, 2014).

#### **4.6 Sampling Procedure**

Sample is a subset of the population elements that result from the sampling strategy (Pickard, 2013). According to Johnson and Christensen (2012) a sample is a representative part of the population. The sample is usually smaller; it saves time and cost during data collection. Fraenkel and Wallen (2009:90) established that sample is the group on which information is obtained. Ngulube (2005) emphasizes that, sampling is key to the effective description of the characteristics of a population in survey research.

The acceptable sample sizes in studies differ by discipline, however, Andrew, Pedersen and McEvoy (2011:50) suggested that the researcher can get a sample size of the study by reviewing literature or consult published sample tables. Consequently, this study adopted sample sizes from Pickard (2013:62); Guthrie (2010:55); Johnson and Christensen (2012:234); Connaway and Powell (2010:130); and Sau (2013:47) methods of selecting sample sizes. Lwehabura (2007) used the same sample size table to study the status and practice of information literacy for teaching and learning in four Tanzanian Universities. The table of selecting sample sizes is reflected in table 3 shown below (Guthrie, 2010).

Table 3: Sample Size Table.

<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>	<i>N</i>	<i>S</i>
10	10	100	80	280	162	800	260	2,800	338
15	14	110	86	290	165	850	265	3,000	341
20	19	120	92	300	169	900	269	3,500	346
25	24	130	97	320	175	950	274	4,000	351
30	28	140	103	340	181	1,000	278	4,500	354
35	32	150	108	360	186	1,100	285	5,000	357
40	36	160	113	380	191	1,200	291	6,000	361
45	40	170	118	400	196	1,300	297	7,000	364
50	44	180	123	420	201	1,400	302	8,000	367
55	48	190	127	440	205	1,500	306	9,000	368
60	52	200	132	460	210	1,600	301	10,000	370
65	56	210	136	480	214	1,700	313	15,000	375
70	59	220	140	500	217	1,800	317	20,000	377
75	63	230	144	550	226	1,900	320	30,000	379
80	66	240	148	600	234	2,000	322	40,000	380
85	70	250	152	650	242	2,200	327	50,000	381
90	73	260	155	700	248	2,400	331	75,000	382
95	76	260	159	750	254	2,600	335	1,000,000	384

(Source: Guthrie, 2010)

Note: N= Population size; S= Sample size

This study covered four universities; with a population of 1230 academics which was sampled. Therefore, according to the table for selecting the sample size the sample of academics was 291. To arrive at sample of each university, the researcher calculated relative samples proportionately as depicted in table 8.

The sample size of academics of 291 was distributed as follows: St Augustine University of Tanzania (SAUT) - 35, Sokoine University of Agriculture (SUA)-166, Mzumbe University (MU)-61, and University of Iringa (UoI) -29 as shown in Table 4.

Table 4: Sample Sizes Calculations for the Academics

	<b>Population</b>		<b>Sampling</b>
University	Population	Proportionate sample size for each university (population of university/overall population for all universities * sample size	Sample size of individual universities
<b>SAUT</b>	150	$\frac{150 \times 291}{1230}$	35
<b>SUA</b>	700	$\frac{700 \times 291}{1230}$	166
<b>MU</b>	260	$\frac{260 \times 291}{1230}$	61
<b>UoI</b>	120	$\frac{120 \times 291}{1230}$	29
<b>Total</b>	<b>1230</b>	<b>100%</b>	<b>291</b>

(Source: Research data, 2015)

To reach the respondents in their various institutions, the researcher adopted simple random sampling technique. Kothari (2006:67) reveals that simple random sampling generally eliminates bias and the sampling error can be estimated. Through random sampling all academics in each university had an equal chance of being selected as a participant in the study. The researcher used lottery method as follows: the academic list of each university was used to get the total number of academics, the names of the academics were assigned numbers, and the numbers were written on separate piece of papers and put in the container and shaken. The researcher then randomly picked the papers equal to the number of a sample size of a particular university. The selected numbers equal to the sample size in each university formed a sample size of the study. The selected names were used as respondents.

The other categories of the respondents were Librarians 41, and deans of faculties, 20. The number of respondents for these two categories was small; therefore census was taken of respondents and interviewed Andrew, Pedersen and McEvoy (2011:50) describe census as population sampling, used for small population, where every number of the targeted population is incorporated as a subject in the study.

#### **4.7 Data Collection Procedures**

In the mixed methods research, the collection of mixed data is achieved through the use of two or more complementary methods of data collection that separately collect qualitative and quantitative data either sequentially or concurrently (Brannen & Halcomb, 2009). In this study the data was collected using interview and questionnaire. An interview is a data collection tool in which the researcher asks questions from the research participants to gather qualitative data (Johnson & Christensen, 2012:198). Interviews are most commonly linked with qualitative research; they are useful tool in collecting mixed data using mixed methods research. Consequently, the structured interviews were used to collect qualitative data from the deans and Librarians on their thoughts, interests, attitudes, beliefs, experiences, knowledge, motivations, etc. (Brink *et al.*, 2012:157). Moreover, information was gathered from deans on policy, capacity building, resources, infrastructure, organisation structure and culture. Face to face interviews were used to collect data because the researcher could clarify questions and probe when need arose (Johnson & Christensen, 2012:198). Interview was used in order to gather data on the thoughts, feelings, attitudes and experiences of staff on knowledge sharing. Face to face Interviews helped to clarify questions and also for probing further.

A survey questionnaire on the other hand was used to collect quantitative and qualitative data from academics on knowledge sharing attitudes, values, perceptions, feelings, university culture, knowledge creation, knowledge management policy, knowledge management strategies, perception towards knowledge sharing and management support. Both open and closed questions were combined and used in the questionnaire to collect quantitative and qualitative data. Open-consisted of blanks for the respondent to complete whereas closed questions contained questions with boxes which allowed respondents to tick or scales to rank. These questions were used to gather quantitative data which was used to generate statistics in

quantitative research (Dawson, 2009:31). Due to time factor and financial limitation the questionnaires was appropriate to collect data from the large number of dispersed population of academics. Both quantitative and qualitative data were collected concurrently using questionnaire; however, interview was conducted separately. The reason of using different instruments for the three groups was to complement each other in gathering detailed information. The data collection tools used in this study are presented as appendix 1: Questionnaire for academic staff, appendix 2: Interview guide for librarians and appendix 3: interview guide for deans of faculties.

#### **4.8 Data Analysis**

Data analysis in mixed research methods uses both qualitative and quantitative analytical techniques in a single study (Creswell & Clark, 2011:212). According to Johnson and Christensen (2012:538) in mixed methods data can be analyzed concurrently or sequentially. In concurrent data analysis, both qualitative and quantitative data are analyzed at the same time. On the other hand in sequential data analysis, qualitative and quantitative data are analyzed separately at different times (Creswell & Clark, 2011:203). In this study data was analyzed sequentially, where qualitative and quantitative data was analyzed separately and mixing in presentation and discussion of findings.

Ivankova, Creswell, and Stick (2006) pointed out that the data collected in quantitative and qualitative approaches, can be integrated during the interpretation and discussion of the outcomes. In this regard the discussion combines the qualitative and quantitative results to give more meaningful picture of the research problem. Creswell and Clark (2011:209) explain that interpretation of findings involves stepping back from the detailed results and advancing the larger meaning in view of research problem, questions in the study, the existing literature and perhaps personal experience.

In social science research, various data analysis software has been used. In qualitative data analysis MAXQDA, HyperResearch and NVivo have been used. MAXQDA is professional software for qualitative data analysis. It allows researchers to use a computer-based tool for their qualitative analysis (MAXQDA, 2015). This study did not use MAXQDA. HyperResearch on the other hand is a software tool for qualitative data analysis, developed by Research Ware. The software's essential capabilities are retrieval analysis features, report-

generating capabilities and multimedia support. It gives complete access and control, with keyword coding and theory building (Dupuis, 2008). HyperResearch software is not commonly used because of its complexities.

NVivo, is a computer software package for qualitative data analysis. The software was produced by QSR International in Melbourne, Australia. The software has two menus; documents and node browsers, both document and node browsers have an attribute feature which helps researchers to deal characteristics of the data such as age, gender, marital status, ethnicity etc. (Hilal & Alabri, 2013). The software reduces a number of manual works and gives the researcher more time to explore trends, identify themes and derive conclusions (Wong, 2008). Jones (2007) established that Nvivo software shortens analysis timeframes, it provides more thorough and rigorous coding and interpretation, and provides researchers with enhanced data management. Bazeley and Jackson (2013) pointed out that using Nvivo, the researchers will manage data, ideas and organize them in categories and themes. It also keeps track of the messy records and put them in order.

In this study, qualitative data analysis involved pursuing the relationship between categories and themes of data in order to increase the understanding of the phenomenon being investigated (Hilal & Alabri, 2013). Thematic analysis was used for qualitative data. This was achieved by sorting, categorising, classifying each piece of data and organising in themes that reflected main concerns of respondents. Nieuwenhuis (2016:109) asserts that qualitative data analysis is generally based on an interpretative philosophy. Leedy and Ormrod (2010:153) suggest that qualitative data analysis involves organisation, scrutiny, identification of major categories, integrating and summarizing data.

Several software package exist that can be used in quantitative data analysis; such as Structural Equation Modeling (SEM), Statistical Analysis System (SAS) and Statistical Package for the Social Sciences (SPSS) . SEM is a software used for quantitative data analysis. It is used to test hypothesis about relationship between variables (SEM, n.d.). SAS similarly is a statistical data analysis software for spreadsheet analysis, generating graphics, generating descriptive and inferential statistics, report generation etc (Peng, 2009:5). This study used SPSS for quantitative data analysis. The software was suitable for generating statistics, frequency tables, cross tabulation, chi-square, etc. SPSS is a program used to describe and analyses statistical data (Grotenhuis & Matthijssen, 2015).

#### **4.9 Reliability and Validity**

Reliability and validity are two criteria used to judge the quality of all standardized quantitative measures. Reliability refers to the consistency of scores that is, the ability of an instrument's to produce approximately the same score for an individual over repeated testing (Lodico, Spaulding, & Voegtler, 2010:93). According to Mangal and Mangal (2013:565) reliability refers to the dependability that can be imposed in a pre-test and demonstrated through the consistency and stability of its measures. Bryman (2012:116) expresses reliability as the consistency of a measure of a concept. Fowler (2002:10) asserts that one way to ensure reliability is for the researcher to do a pilot study to measure the range of opinion and ideas peoples have in the study for the purpose of testing the instruments.

Validity on the other hand is the accuracy and degree of precision demonstrated by a researcher from all the data in the study (Ivankova & Creswell, 2009:154), credibility of people's interpretation (Silverman, 2013:285). Lodico, Spaulding & Voegtler (2010:93) pointed out that validity focuses on ensuring that what the instrument claims to measure is truly what it is measuring thus to show the instrument accuracy. Brayman (2012:118) articulate that validity is the issue of whether an indicator that is planned to test a concept really measures that concept. The goal of measurement validity is to ensure that instruments, such as questionnaires, consistently and reliably measure something (Giddings & Grant, 2009:124). Van Teijlingen Hundley and Graham (2001) demonstrate the importance of conducting pilot study to establish whether the sampling frame and technique are effective, resources needed for the study such as people, and funding are available. Creswell and Clark (2011:239) state that achieving validity in mixed methods research involves using strategies that address potential issues in data collection, data analysis and the interpretations that might compromise the integration of the quantitative and qualitative methods of the study and the conclusion drawn from the mixture. Lodico, Spaulding and Voegtler (2010:93) pointed out that in order to have value the instrument must have sound reliability and validity. Therefore it is imperative for the researcher to select the most appropriate and accurate instrument as measurement tool of the study



Consequently, in this study prior to data collection, content validity was used to pre-test the instruments. The questionnaire was pre-tested on 10 academics at Catholic University of Health and Allied Sciences (CUHAS) to determine their understanding of the questions asked and thereafter suggestions were made that helped to revise the instruments. Pre-testing of the questionnaire was done with the intention of ensuring the reliability and validity of the instruments (Krosnick, Lavrakas, & Kim, 2014:427). Minor improvements were made on the instruments based on the feedback obtained from the pilot respondents. They included renumbering some of the questions to make them consistent with other questions. Previous studies of Muchaonyerwa (2015) on knowledge sharing strategies in university libraries in Kwazulu-Natal province of South Africa and Mushi (2009), on intellectual capital and public university libraries: knowledge sharing perspectives in public libraries in Tanzania attained reliability and validity by pre-testing the instruments.

To ensure reliability of interview the results obtained and interpretations were taken back to the participants, as a test in order to affirm and validate them. Eight (80%) of the 10 academics agreed that the instrument would collect the desired data. In this way the plausibility and truthfulness of the information was recognized and supported (Zohrab, 2013). The interview questions were also pre-tested on one dean of faculty, and one librarian to determine their understanding of the questions, thereafter minor changes were made. This research adopted internal consistency to establish reliability of the instruments.

#### **4.10 Ethical Considerations**

Considerations of ethical issues in research are integral throughout the research process in order to avoid collisions between the researcher and participants (Gravetter & Forzano, 2016:99). In this regard the researcher complied with the UKZN research ethics protocol. The researcher also obtained informed consent from the respondents prior to the study. In addition, gate keepers' permissions were obtained. Miller and Bell (2012:71) emphasise that consent must be obtained prior to any research commencing. In this regard, participants should be fully informed about a research project before they concur to taking part (Oliver, 2003:28). Similarly, Israel and Hay (2006:61) agree that participants need to comprehend and to agree voluntarily to the nature of their research and their role within it. Therefore, the researcher provided potential participants with information about the purpose and possible outcomes of the study and requested them to respond to the questionnaires and interview.

The respondents were assured that all information provided was confidential and would be used for academic purposes only, no individual names of respondents were revealed in the reporting. Loue (2002:147) asserts that research may involve collecting and storing data relating to individuals and groups, and such data, if disclosed to third parties, may cause harm or distress. Accordingly, it is a responsibility of the researcher to protect such data by, for example, omitting information that might lead to the identification of individual subjects. Anonymity of respondents was ensured by limiting identifying them by their name. Respondents were asked to participate voluntarily in the study without any form of coercion.

#### **4.11 Summary**

The chapter described the research methodology that was used in the study. In particular post positivist paradigm was used to underpin the study thus, enabling the methodological dualism in the use of qualitative and quantitative approaches. The study used a mixed method approach combining quantitative and qualitative approaches. The survey research design was adopted, where the population of academics in four universities numbering 1230 was targeted with a sample of 291 academics chosen for study. Simple random sampling technique was used to get a sample of academics in each university during data collection period. The population of deans of faculties was 20 and 41 professional librarians. Census was applied for the two categories of respondents respectively. Connaway and Powel (2010:116) assert that a census is a survey of all the elements of a population. Ruane (2005:109) points out that for every small populations a census is appropriate.

Furthermore, the study used questionnaire and face to face interview to collect quantitative and qualitative data respectively. Quantitative data was analyzed using SPSS to generate descriptive data while qualitative data was analyzed thematically and presented in narrative description. Validity and reliability of data was assured through pilot study at CUHAS. Ethical considerations were ensured through compliance with UKZN research ethics policy. The knowledge sharing studies conducted in Tanzania did not apply Post positivist paradigm. This study used post positivist paradigm to understand participants' meanings, attitudes and to measure variables and generalize findings.

Table 5 provides a summary of the research questions, data sources and data analysis strategies which were be used in the course of the study.

Table 5: Research Questions, Data Sources and Analysis Strategies

Research questions	Data sources	Data analysis strategies
How does organisation culture promote or hinder knowledge sharing among academics in the universities?	Interview and questionnaire	<b>Qualitative data:</b> The data obtained from the interview was analyzed thematically and presented in narrative description.  <b>Quantitative data:</b> The data obtained from the questionnaire was edited for completeness and cleaned. After checking, the data was coded and converted into numerical form and input in SPSS for analysis to generate descriptive statistics.
To what extent do universities in Tanzania support knowledge creation and sharing among academics?	Interview and questionnaire	
What knowledge sharing strategies exist in the universities?	Interview and questionnaire	
How are the academics leveraging knowledge assets in their core functions of teaching, research and consultancy?	Interview and questionnaire	
What are the attitudes of academics towards knowledge sharing?	Interview and questionnaire	
What factors influence knowledge sharing among academics in Tanzanian universities?	Interview and questionnaire	

(Source: Research, 2015)

## **CHAPTER FIVE**

### **DATA ANALYSIS AND PRESENTATION OF FINDINGS**

#### **5.1 INTRODUCTION**

This chapter presents the findings of the study and data analysis. Perron and Gillespie (2015:30) state that the purpose of data analysis and presentation of findings in research is to summarise the information collected to formulate an answer to the research questions. Grinnell and Unrau (2011:448) assert that data analysis is aimed at sifting, sorting and organising masses of data acquired during data collection into a meaningful way which address the original research problem that has previously been identified.

The purpose of the study was to investigate the status of knowledge sharing in universities in Tanzania. The study sought to address the following research questions:

- 1) How does organisation culture promote or hinder knowledge sharing among academics in the universities?
- 2) To what extent do universities in Tanzania support knowledge creation and sharing among academics?
- 3) What knowledge sharing strategies exist in the universities?
- 4) How are the academics leveraging knowledge assets in their core functions of teaching, research and consultancy?
- 5) What are the attitudes of academics towards knowledge sharing?
- 6) What factors influence knowledge sharing among academics in Tanzanian universities?

The study was conducted in four Tanzanian universities namely; St Augustine University of Tanzania, Sokoine University of Agriculture, Mzumbe University and University of Iringa. The respondents were academic staff, deans of faculties and the librarians. The study was underpinned by knowledge sharing model. The post positivist paradigm was applied with quantitative and qualitative approaches.

Survey questionnaires were administered to 291 academics from which 261 were completed and returned, yielding a response rate of (89.6%). Interviews were administered to 18 (90%)

deans of faculties out of 20 that were targeted. Furthermore, 30 (73.17%) librarians were interviewed out of 41 respondents that were targeted. The overall return rate is tabulated in table 6.

Table 6: Overall return rate (N=352)

Target group	Sample size	Percentage
Academics	n=291	82.7
Deans of faculties	n=20	5.7
Librarians	n=41	11.6

(Source: Field Data, 2016)

Jacque et al (2016:164) and Bryman (2012:224) state that the acceptable response rate should be at least 60 %. They further point out that response rates can be ranked: 60-69%- acceptable, 70-85%- very good and 85% excellent. Rubin and Bellamy (2012) suggest 50% as the acceptable level of response. Jacque et al (2016:164) point out that low response rates do not lend themselves to any advanced statistical analysis and should be avoided. The response rates for all categories of respondents and from individual universities are tabulated in table 7 and 8 respectively

Table 7: Response rates for all categories of respondents

Category	Responses	Percentage
Academics	261	84.5
Deans	18	5.8
Librarians	30	9.7

Table 8: Response rates from individual universities (N=309)

	Academics	Deans	Librarians
University	Response rate (%)	Response rate (%)	Response rate (%)
SAUT	35 (11.3%)	4(1.3%)	5(1.6%)
SUA	141(45.6%)	4 (1.3%)	11 (3.6%)
MU	58(18.8%)	5(1.6%)	9(2.9%)
UoI	27(8.7%)	5(1.6%)	5(1.6%)

(Source: Field Data, 2016)

## 5.2 The Findings

The findings are presented based on the themes of the research questions namely: University organisational culture and knowledge sharing among academics; University support of knowledge creation and sharing; knowledge sharing strategies; leveraging knowledge assets in teaching, research and consultancy; attitudes towards knowledge sharing; and factors influencing knowledge sharing among academics.

### 5.2.1 Biographical Information

This section presents biographical data of the respondents from the four universities namely; St Augustine University of Tanzania, Sokoine University of Agriculture, Mzumbe University and University of Iringa respectively. The respondents were Academic staff, deans of faculties and the librarians.

#### 5.2.1.1 Highest Qualifications for Academic Staff

Table 9 presents the highest qualification of the academic staff of each university as an overall % of the total in all the universities

Table 9: Higher qualification for academic staff (N=261)

University	Bachelor's Degree Holders	Master's Degree Holders	PhD Degree Holders
SAUT	0 (0%)	19 (7.3%)	16 (6%)
SUA	7 (2.7%)	68 (26.1%)	66 (25.3%)
MU	5 (1.9%)	34 (13%)	19 (7.3%)
UoI	0 (0%)	20 (7.7%)	7 (2.7%)
Total	12 (4.6%)	141(54.1%)	108 (41.3%)

(Source: Field Data, 2016)

The results presented in table 9 above show that in all the universities studied respondents' highest academic qualifications were in three categories namely bachelor's degree holders 12 (4.6%), master's degree holders 141 (54%) and PhD degree holders 108 (41.4%). The results revealed that among academic staff the majority were master's degree holders.

In addition, the study sought to find out the highest academic qualification of the deans of faculties. The results revealed that the deans in the four universities were either master's degree holders 5 (27.8%) or PhD holders were 13 (72.2%). The deans of faculties who were PhD holders were clearly in the majority. The results are presented in Table 10 of each university as an overall percentage of all universities.

Table 10: Higher qualifications for deans of faculties (N=18)

	SAUT	SUA	MU	UoI	Total
Master's degree holders	1 (5.5%)	0 (0%)	1 (5.5%)	3 (16.7%)	5 (27.8%)
PhD degree holders	3 (16.7%)	4 (22.2%)	4 (22.2%)	2 (11.1%)	13 (72.2%)

(Source: Field Data, 2016)

The study also sought the highest academic qualifications of the Librarians in the four universities. The results revealed that 11 (36.7%) were bachelor's degree holders, 16 (53.3%)

were master's degree holders and PhD degree holders were 3 (10%) respectively. The results are represented in Table 11 below.

Table 11: Highest academic qualifications of Librarians (N=30)

	SAUT	SUA	MU	UoI
Bachelor's Degree Holders	4 (13.3%)	3 (10%)	3 (10%)	1 (3.3%)
Master's Degree Holders	1 (3.3%)	6 (20%)	6 (20%)	3 (10%)
PhD degree holders	0 (0%)	2 (6.7%)	0 (0%)	1 (3.3%)

(Source: Field Data, 2016)

## 5.2.2 Universities Organisational Culture

This section addresses research question 1: *How does organisational culture promote or hinder knowledge sharing among academics in the universities?* The knowledge sharing model considers organisation culture as an enabler for the transfer, creation and sharing of knowledge (Lin, 2007; Riege, 2005).

### 5.2.2.1 Organisational Culture

The academics were asked in question 7 of the survey questionnaire (appendix 1) if their individual university cultures promoted knowledge sharing among academics.

In response to the question, 224 (86.1%) respondents believed that their university cultures promoted knowledge sharing. This comprised 9 (3.4%) bachelor's degree holders, 122 (46.9%) master's degree holders and 93 (35.8%) PhD degree holders. The findings showed that master's degree holders are in the majority who were aware that their universities' culture promoted knowledge sharing. The results based on individual universities indicated that every university had ways of promoting knowledge sharing with St Augustine University of Tanzania posting 33 (94.3%), Mzumbe University 51 (88%), Sokoine University of Agriculture 122 (87.1%) and University of Iringa 18 (66.7%).

Of the respondents 35 (13.5 %) who felt their universities did not promote a culture of knowledge sharing 3 (1.2%) were bachelor's degree holders, 18 (6.9%) were master's degree holders and 14 (5.4%) PhD degree holders. Only 1 (0.4%) respondent who was a master's



degree holder responded that he did not know. Cross tabulation was computed to find out how academics with different level of education perceived how their universities promoted culture of knowledge sharing. The findings revealed that academics with different levels of education agreed that organisational culture promotes knowledge sharing in the universities. The findings are presented in figures 9 and table 12 respectively.

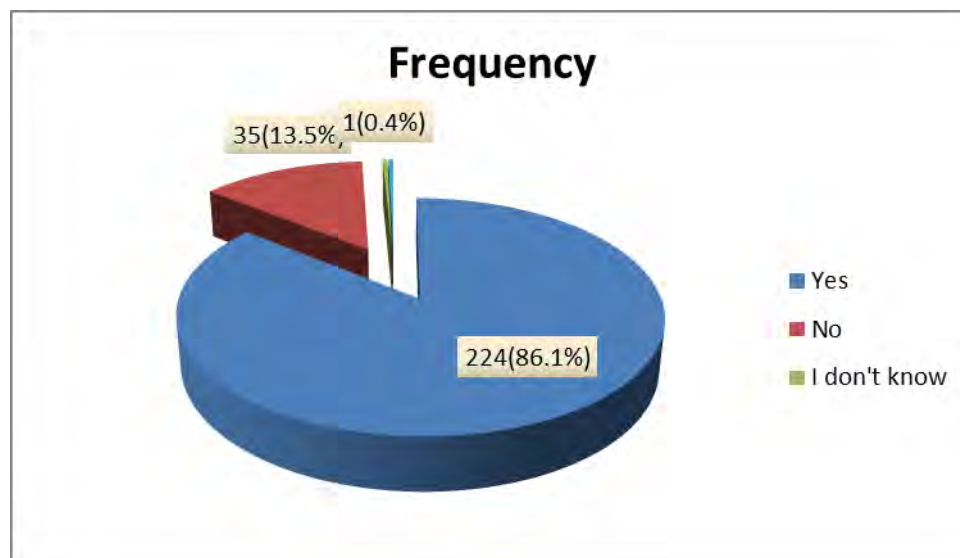


Figure 9: How organisational culture promotes knowledge sharing among academics in universities (N= 260) (Source: Field Data, 2016)

Table 12: Cross tabulation of knowledge sharing culture and level of education (N=260)

Level of education		University promote knowledge sharing culture			Total
		Yes	No	I don't know	
Bachelor degree holders	Count	9	3	0	12
	% within level of education	75.0%	25.0%	0.0%	100.0%
	% within University promote knowledge sharing culture	4.0%	8.6%	0.0%	4.6%
Masters degree holders	Count	122	18	1	141
	% within level of education	86.5%	12.8%	0.7%	100.0%
	% within University promote knowledge sharing culture	54.5%	51.4%	100.0%	54.2%
PhD degree holders	Count	93	14	0	107
	% within level of education	86.9%	13.1%	0.0%	100.0%
	% within University promote knowledge sharing culture	41.5%	40.0%	0.0%	41.2%
	Count	224	35	1	260
	% within level of education	86.1%	13.5%	0.4%	100.0%
	% within University promote knowledge sharing culture	100%	100%	100%	100%

(Source: Field Data, 2016)

The respondents were further asked in question 7 (i) of the survey questionnaire (Appendix 1), to explain *how they believed their organisations promoted culture of knowledge sharing*. Multiple responses were provided through which the universities promoted knowledge sharing. These included workshops 108 (41.5%), research 100 (38.5%), seminars 86 (33.1%), publications 77 (29.6%), presentations 73 (28.1%), meetings 44 (16.9%), public lectures 35 (13.5%), forums 34 (13.1%) and conferences 33 (12.7%). The other ways the universities promoted knowledge sharing included institutional repositories 30 (11.5%), training 27 (10.4%) and colloquia 14 (5.4%). The results are summarized in figure 10 and table 13 respectively.

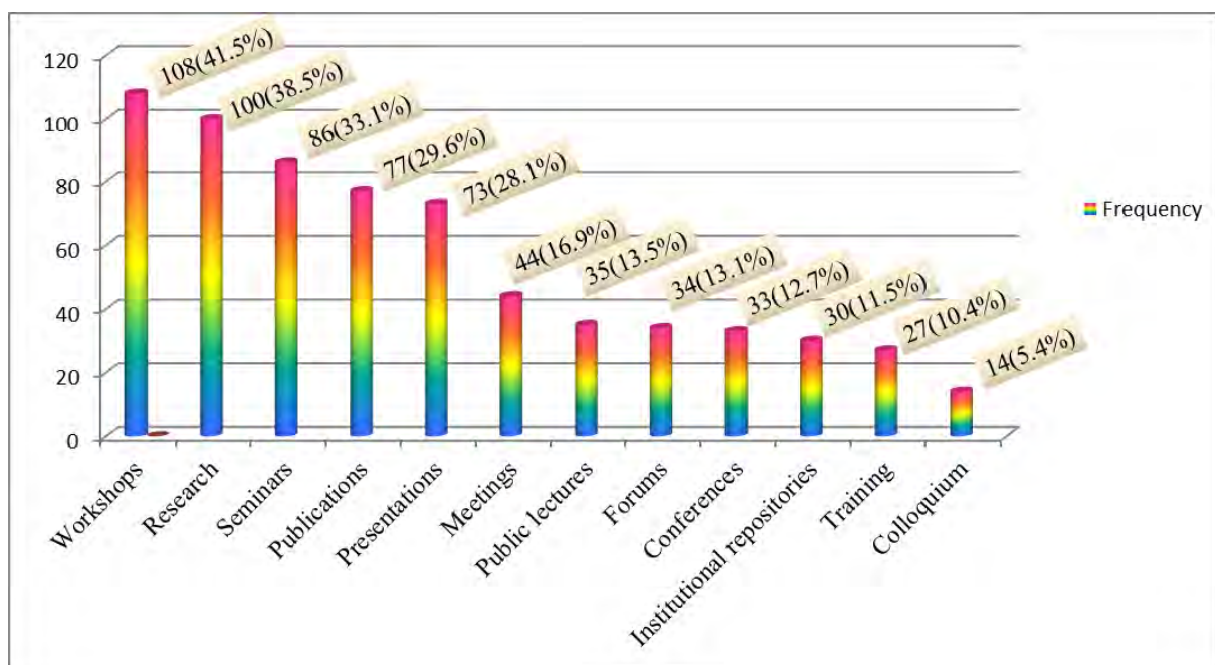


Figure 10: Ways by which universities promote culture of knowledge sharing (N=260)

(Source: Field Data, 2016)

Table 13: Ways by which universities promote culture of knowledge sharing

(N=260)

Ways University promoted knowledge sharing	Frequency	Percentage
Workshops	108	41.5
Research	100	38.5
Seminars	86	33.1
Publications (Journals, books, reviews)	77	29.6
Presentations	73	28.1
Meetings	44	16.9
Public lectures	35	13.5
Forums	34	13.1
Conferences	33	12.5
Institutional repositories	30	11.5
Training	27	10.4
Colloquia	14	5.4

(Source: Field Data, 2016)

The study computed Chi – square ( $\chi^2$ ) to examine the association between culture of knowledge sharing and knowledge sharing policies. The findings returned a P value of 0.001 showing that statistically a culture of knowledge sharing and knowledge sharing policies are associated. The findings are presented in table 14 and 15 respectively.

Table 14: Cross tabulation of culture of knowledge sharing and knowledge sharing policies (N=260)

			Universities knowledge sharing policies			Total
			Yes	No	I don't know	
University promoting knowledge sharing culture	Yes	Count	90	55	79	224
		% within promote knowledge sharing culture	40.2%	24.6%	35.3%	100.0%
		% within knowledge sharing policies	95.7%	73.3%	86.8%	86.2%
		% of Total	34.6%	21.2%	30.4%	86.2%
	No	Count	4	19	12	35
		% within promote knowledge sharing culture	11.4%	54.3%	34.3%	100.0%
		% within knowledge sharing policies	4.3%	25.3%	13.2%	13.5%
		% of Total	1.5%	7.3%	4.6%	13.5%
	I don't know	Count	0	1	0	1
		% within promote knowledge sharing culture	0.0%	100.0%	0.0%	100.0%
		% within knowledge sharing policies	0.0%	1.3%	0.0%	0.4%
		% of Total	0.0%	0.4%	0.0%	0.4%
	Total	Count	94	75	91	260
		% within promote knowledge sharing culture	36.2%	28.8%	35.0%	100.0%
		% within knowledge sharing policies	100.0%	100.0%	100.0%	100.0%
		% of Total	36.2%	28.8%	35.0%	100.0%

(Source: Field Data, 2016)

Table 15: Chi- Square tests

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	18.681 <sup>a</sup>	4	.001
Likelihood Ratio	19.286	4	.001
Linear-by-Linear Association	2.948	1	.086
N of Valid Cases	260		

a. 3 cells (33.3%) have expected count less than 5. The minimum expected count is .29.

The respondents were asked in question 7 (ii) of the survey questionnaire (appendix 1): *“If your answer to question 7 is no, give reasons why you believe your universities do not promote a culture of knowledge sharing.* Findings from multiple responses indicated that universities did not promote a culture of knowledge sharing for various reasons. From those who responded to this question, 21 (8.1%) said universities’ management did not provide support for knowledge sharing because universities priority is teaching, another 12 (4.6%) indicated that the universities did not promote a culture of knowledge sharing because of financial constraints. Moreover 13 (5%) indicated that there is no government support for knowledge sharing in the universities because no allocation of funds to support research and training in the universities are provided.

To validate the results obtained from question 14 (appendix 3) of the interview schedule for the deans of faculty asked *how their universities promoted culture of knowledge sharing.*

All 18 (100 %) respondents seem to suggest that the universities promoted culture of knowledge sharing through building solidarity among staff which helps academics to build a sense of trust and participate in knowledge sharing, through encouraging academic staff to work as a group, collaborate, and interact to facilitate sharing of knowledge. Furthermore, the universities encouraged academics to be innovative in generating knowledge. The respondents also noted that trust between management and academics encouraged a culture of knowledge sharing. They added that top down and bottom up communication between

university leadership and academics promoted culture of knowledge sharing. They also pointed out that through the directorates of research; the universities encouraged collaboration among academics by supporting academics participation at workshops and conferences. They also pointed out that the universities were improving ICT infrastructure to encourage and facilitate knowledge sharing.

The librarians were similarly asked in the interview schedule (question 3, appendix 2) to *explain how their universities promoted a culture of knowledge sharing*. The findings revealed that; 19 (63.3%) were of the respondents were of the opinion that the universities encouraged their academic staff to conduct research and publish the research findings, the universities also provided funds to enable scholars pay for page fees for publication of their scholarly work and that universities were investing in ICT infrastructure to promote knowledge sharing.

From the librarians, 11 (36.7%) of the respondents were of the opinion that universities were not promoting a culture of knowledge sharing among academic staff because more focus was placed on supporting teaching activities at the expense of knowledge sharing. They also noted that inadequate funding to sustain knowledge sharing practices hindered the promotion of knowledge sharing culture among the academic staff.

The findings from the questionnaire and interview schedule respectively showed that the universities promoted a culture of knowledge sharing as demonstrated by 224 (86.1%) respondents who completed survey questionnaire and also by 18(100%) of deans who responded to the interview schedule.

#### **5.2.2.2 Organisation Structure**

In question five of the interviews schedule for the deans of faculties (appendix 3) the respondents were asked to explain how *in their opinions organisation structure promoted knowledge sharing*. All 18 (100%) respondents said the organisation structures in the universities did not have knowledge management units for promoting knowledge sharing. They however acknowledged that academics were to some extent enabled by directorates of research and publications to share knowledge. It was also revealed that deans of faculties and heads of departments encouraged academics in their universities to publish their scholarly

works and share them with their colleagues. They also reiterated that the directorate of research and publications through faculties provided support to the academics especially with regard to supporting conference and workshops.

The knowledge sharing model asserts that organisational structure has significant cultural influences on knowledge sharing (Al-Adaileh, 2011; Al-Alawi *et al.*, 2007). Furthermore flexible organisational structures encourage sharing and collaboration across boundaries within the universities because they promote interactions among academics (Gold *et al.*, 2001). Knowledge sharing becomes successful with the support structure that allows the unhindered flow of information between divisions (Syed, Ikhsan & Rowland, 2004).

### **5.2.3 Universities Support of Knowledge Creation**

The section addresses the research question two: *To what extent do universities support knowledge creation and sharing among academics?* The knowledge sharing model asserts that management support is an important factor for knowledge sharing especially where incentives and rewards are provided (Bulan & Sensuse, 2012; Lin, 2007)

#### **5.2.3.1 Knowledge Creation and Sharing**

Question 9 of the survey questionnaire (appendix 1) sought to find from respondents if *their universities were involved in knowledge creation and sharing*. The findings showed that 244 (93.8%) of respondents were of the opinion that their universities were involved in knowledge creation. This comprised 34 (13.1%) from SAUT, 132 (50.8%) from SUA, 54 (20.8%) from MU and 24 (9.2%) from UoI. On the other hand 13 (5%) did not think their universities were involved in knowledge creation and sharing. This comprised 1 (0.4%) from SAUT, 6 (2.3%) from SUA, 3 (1.2%) from MU and 3 (1.2%) from UoI. Furthermore 3 (1.2%) did not know whether universities were involved in knowledge creation or not. This comprised 2 (0.8) from SUA and 1 (0.4%) from MU. The findings are further presented in figure 11 and table 16 respectively.



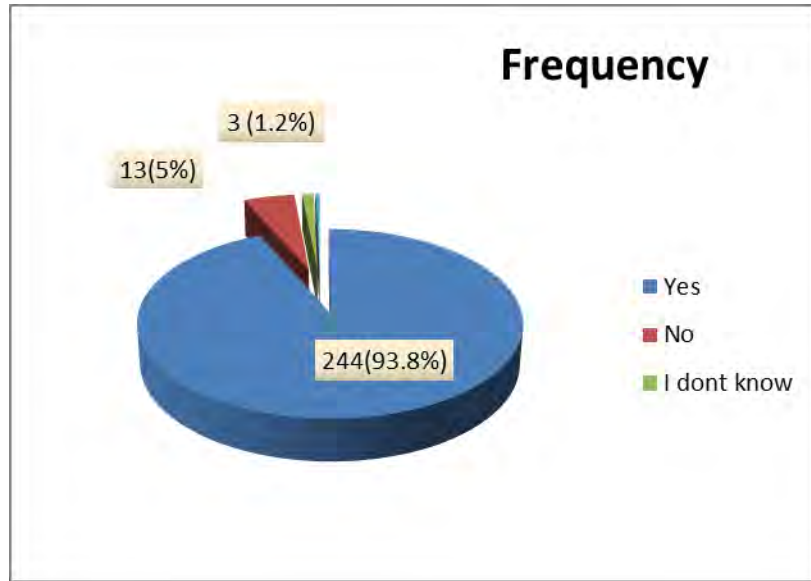


Figure 11: University support for knowledge creation and sharing (N=260)  
(Source: Field Data, 2016)

Table 16: University support knowledge creation and sharing (N=260)

Responses	Universities				Total
	SAUT	SUA	MU	UoI	
Yes	34 (13.1%)	132 (50.8%)	54 (20.8%)	24 (9.2%)	244 (93.8%)
No	1 (0.4%)	6 (2.3%)	3 (1.2%)	3 (1.2%)	13 (5%)
I don't know	0 (0%)	2 (0.8%)	1 (0.4%)	0 (0%)	3 (1.2%)

(Source: Field Data, 2016)

The deans of faculty were asked similarly in question 7 of the interview schedule (appendix 3) to explain how they supported knowledge creation and sharing in their universities. All deans 18 (100%) indicated that they promoted mentorship programmes where senior academics groomed junior academic staff to get experience and competence in knowledge generation. They also pointed out that university solicited funds from different sources to facilitate knowledge creation and sharing among academics through research. The findings from the questionnaire and interview revealed that majority of respondents felt the universities supported knowledge creation and sharing as reflected by respondents 244(93.8%) in the survey questionnaire (Appendix 1), and 18 (100%) of respondents in the interview schedule. The knowledge sharing model that states that the management support

knowledge is critical for the creation and sharing of knowledge (Bulan & Sensuse, 2012; H. Lin, 2007)

### 5.2.3.2 Staff Responsible for Knowledge Sharing

Question 10 of the survey questionnaire (appendix 1) for the academics sought to understand *whether the universities have staff responsible for spearheading knowledge sharing*. Majority of respondents 159 (60.9 %) indicated that there were designated staff for promoting knowledge sharing in their universities. On the other hand 77 (29.5%) said there were no staff responsible for promoting knowledge sharing in their universities. Another 25 (9.6%) responded that they did not know whether there were staff responsible for promoting knowledge sharing in their universities. Figure 12 presents the results

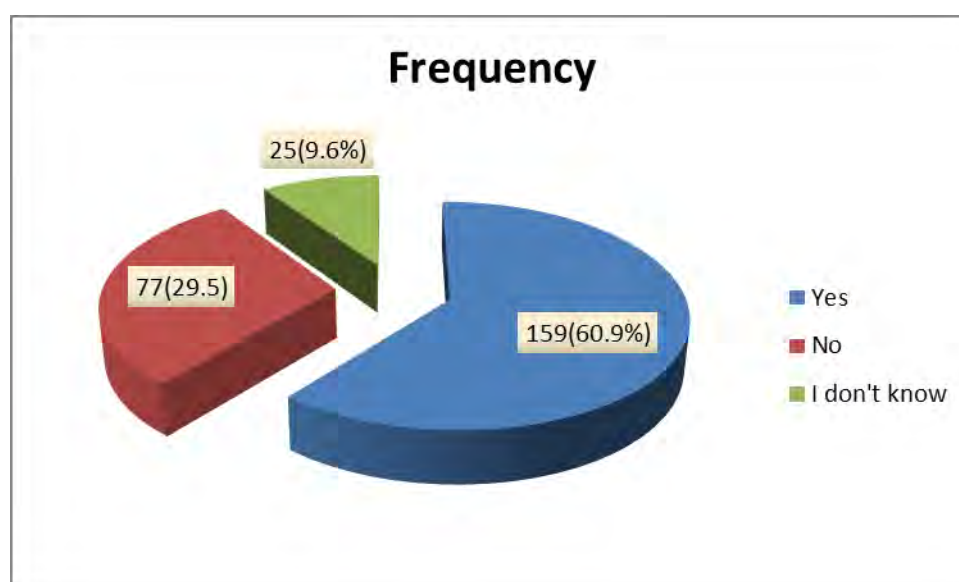


Figure 12: Staff responsible for promoting knowledge sharing (N=261) (Source: Field Data, 2016)

The respondents in the category of deans in the interview schedule (appendix 3, question 7(i)), were further asked to state staff who were designated for promoting knowledge sharing in their universities. All the 18 (100%) responded that the universities used the directors for research and librarians for promoting knowledge sharing. The findings from both survey questionnaire (100%) and interview schedule (60.9%) indicated that the universities have staff designated for spearheading knowledge sharing. In question 4 of the interview schedule (appendix 2) librarians were asked, to explain *how the knowledge created in their universities was managed*. The results indicated that 25 (83.3 %) of the respondents received, organised

and made information/knowledge available for use. The respondents added that, through ICT they created repositories and developed proper knowledge management systems to enable academic staff to share their expertise electronically. The respondents also pointed out that besides using ICT to manage knowledge they also manually stored knowledge in print form for easy retrieval. However 5 (16.7%) of the respondents pointed out that they hardly managed the knowledge created in the universities because the ICT systems available were not stable and poor electricity supply was a major barrier.

### **5.2.3.3 Knowledge Management and Sharing Policies**

Question 11 of the survey questionnaire (appendix 1) sought to know *whether the Universities have a knowledge management and sharing policy and if they did not have such policy any future plan to formulate one.*

The findings revealed that 94 (36.2%) of respondents said the universities have policies, 76 (29.2 %) said there were no policies and 90 (34.6%) did not know if the policies existed or not. Generally it was not clear whether there were knowledge sharing policies in the universities or not. Generally academics in all universities were not sure that knowledge management and sharing policies existed in their respective universities as reflected by results: SUA 55 (39%), Mzumbe 20 (34.5%), SAUT 11 (31.4%) and UoI 8 (29.6%). In addition, 65 (25%) of the respondents indicated that they did not know if the universities planned to formulate knowledge management and sharing policies in future. The findings presented in figure 13

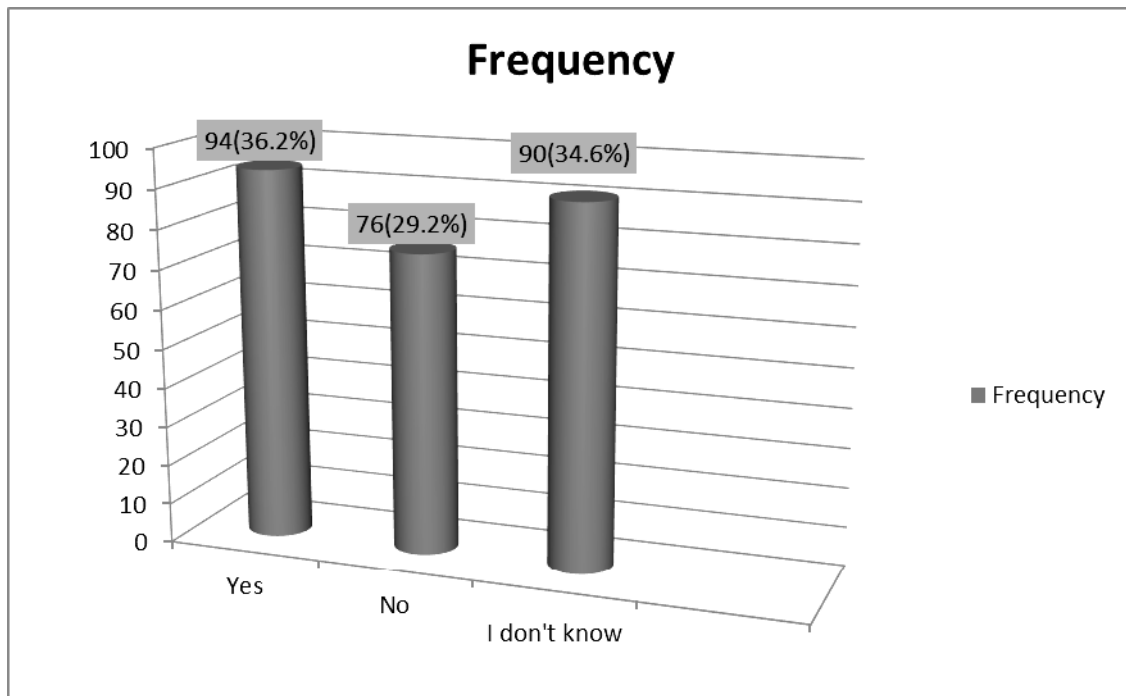


Figure 13: Availability of knowledge management and sharing policy (N=260) (Source: Field Data, 2016)

Furthermore question 9 of the interview schedule for deans of faculties (appendix 3) asked respondents *to elucidate on policies available to enhance knowledge sharing in their universities*. The findings revealed that 18 (100%) of respondents said that the universities have no policies to enhance knowledge sharing. Moreover, 7 (38.9%) of respondents expressed the need for the universities to formulate knowledge management and sharing policies to improve knowledge sharing practices. Furthermore 11 (61.1%) of respondents expressed the need for research and publication policies to be reflected in knowledge sharing policies. The findings from both categories of respondents showed that most universities did not have knowledge management and sharing policies. Responses of 76 (29.2%) academic staff revealed no knowledge management and sharing policies and 90 (34.6%) said they were not sure if the policies existed or not. The responses of the 18 (100%) deans also confirmed that no knowledge management and sharing policies existed in the universities. The knowledge sharing model (Bulan & Sensuse, 2012) states that policies must exist for effective knowledge sharing to take place.

#### 5.2.3.4 Incentives and Rewards

Question 14 of the survey questionnaire (appendix 1) sought to know if *the universities provided incentives or rewards to the academics when they shared knowledge*.

The results revealed that 130 (49.8 %) academics acknowledged that the universities provided incentives and rewards to encourage knowledge sharing while 114 (43.7%) were of the opinion that no incentives or rewards were provided. The results indicated that rewards and incentives were more pronounced at Mzumbe 47 (81%), SAUT 21(60%), UoI 10 (37%) and SUA 52 (36.9%) respectively. Another 17 (6.5 %) of the respondents did not know whether incentives or rewards were provided to encourage knowledge sharing. Cross tabulation was computed to determine if incentives and rewards influenced knowledge creation and sharing. The computation was done by combining data of both incentives and rewards and knowledge creation and sharing. The findings indicated that there was a statistically highly significant relationship between the incentives/rewards and knowledge creation and sharing at  $P < 0.05$  .

The findings of cross-tabulation are presented in 17 and table 18 respectively.

Table 17: The influence of incentives and rewards on knowledge creation and sharing (N=261)

			Incentives and rewards			Total
			Yes	No	I don't know	
Knowledge creation and sharing	Yes	Count	127	106	12	245
		% within Knowledge creation and sharing	51.8%	43.3%	4.9%	100.0%
		% within Incentives and rewards	97.7%	93.0%	70.6%	93.9%
		% of Total	48.7%	40.6%	4.6%	93.9%
	No	Count	3	8	2	13
		% within Knowledge creation and sharing	23.1%	61.5%	15.4%	100.0%
		% within Incentives and rewards	2.3%	7.0%	11.8%	5.0%
		% of Total	1.1%	3.1%	0.8%	5.0%
	I don't know	Count	0	0	3	3
		% within Knowledge creation and sharing	0.0%	0.0%	100.0%	100.0%
		% within Incentives and rewards	0.0%	0.0%	17.6%	1.1%
		% of Total	0.0%	0.0%	1.1%	1.1%
Total		Count	130	114	17	261
		% within Knowledge creation and sharing	49.8%	43.7%	6.5%	100.0%

(Source: Field Data, 2016)

Table 18: Chi- Square tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	48.638 <sup>a</sup>	4	.000
Likelihood Ratio	21.979	4	.000
Linear-by-Linear Association	19.636	1	.000
N of Valid Cases	261		

a. 4 cells (44.4%) have expected count less than 5. The minimum expected count is .20.

Question 14 (i) of the survey questionnaire (appendix 1), further asked the respondents *to indicate the types of rewards that were provided*. The findings revealed promotion 123 (49%), monetary rewards 81(32%), appreciation 31(12%) and training 17 (7%). The results are further presented in Figure 14.

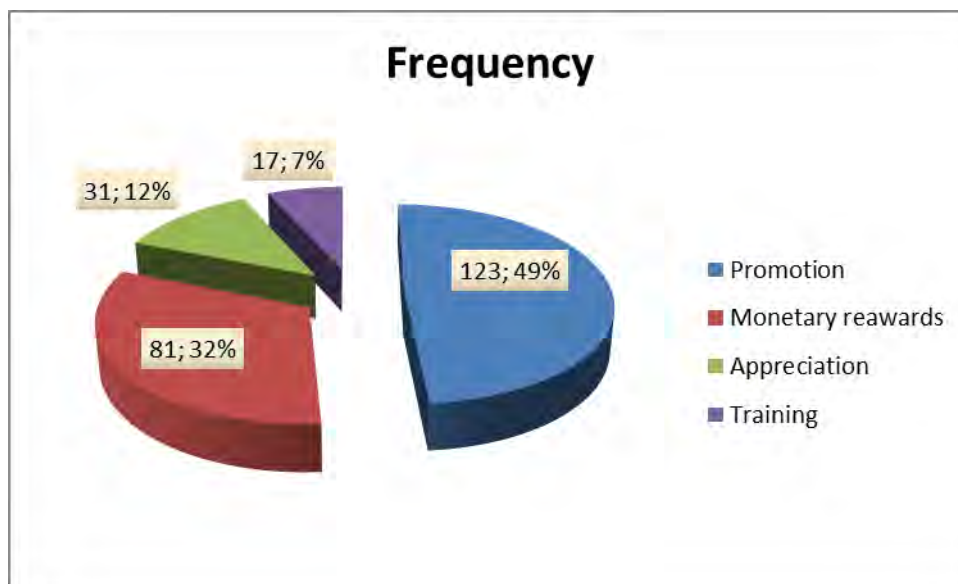


Figure 14: Incentives and rewards provided by the universities to promote knowledge sharing (N=252) (Source: Field Data, 2016)

To buttress the above findings, question 12 of the interview schedule for deans (appendix 3) also asked respondents to state *how academics were motivated to share knowledge*. All the 18 (100%) respondents noted that the universities motivated them through promotions, monetary rewards and funding for research, and appreciations for those who were actively

involved in creating and sharing knowledge. Furthermore 129 (49.8 %) of respondents from academic category accepted that the universities provided incentives and rewards while 113 (43.6%) said that no incentives or rewards were provided. The Knowledge sharing model advocates for incentives and rewards as motivators to share knowledge (Hall, 2001a; Kugel & Schostek, 2004). Question 10 of the interview schedule (appendix 3) also sought from the deans the *budgetary provisions available to facilitate knowledge sharing*. All respondents 18 (100%) noted that universities budgets were inadequate to meet the academic staff requirements for the creation and sharing of knowledge in the universities. One of the respondents was blunt that:

“No specific budget is allocated for knowledge sharing practice”.

#### **5.2.4 Knowledge Sharing Strategies Available in the Universities**

This section addresses the third research question which sought to know *knowledge sharing strategies that exist in the universities*.

##### **5.2.4.1 Knowledge Sharing Strategies to Support Knowledge Sharing**

In the open ended question 12 in the survey questionnaire (appendix 1) respondents were asked to state *knowledge sharing strategies available in their Universities*. The findings showed that 168 (64.4%) respondents revealed that the universities encouraged academics to carry out research and publish scholarly articles. Another 140 (53.6%) of the respondents noted that the universities invested in electronic infrastructure to enable academic staff to share knowledge with others. In particular, they pointed out that libraries have computers connected to the internet to allow access to and sharing electronic resources and scholarly publications. However 76 (29.1%) of the respondents indicated that their universities have radio and TV stations which they use to disseminate and share knowledge. They also pointed out that universities have internal journals in which academics publish and share their scholarly works. Table 19 provides a list of journals generated by each of the universities surveyed.



Table 19: Journals generated by the universities

SAUT	<ul style="list-style-type: none"> <li>• African Communication Research</li> <li>• The Eastern African Journal of Hospitality, Leisure and Tourism</li> <li>• St. Augustine University Law Journal</li> <li>• Multi-Disciplinary Journal of Education.</li> </ul>
SUA	<ul style="list-style-type: none"> <li>• Journal of Agricultural Sciences (TAJAS)</li> <li>• Tanzania Journal of Forestry and Nature Conservation (JFNC)</li> <li>• Tanzania Veterinary Journal (TVJ)</li> <li>• Journal of Agricultural Economics and Development</li> <li>• Journal of Agricultural Education and Extension</li> <li>• Tanzania Journal of Agricultural Engineering</li> <li>• Journal of Development Studies</li> </ul>
MU	<ul style="list-style-type: none"> <li>• Uongozi Journal (Journal of management)</li> <li>• Journal of policy and Leadership</li> <li>• Journal of economic and development</li> </ul>
UoI	<ul style="list-style-type: none"> <li>• Martin Luther Journal</li> </ul>

(Source: Field Data, 2016)

Similarly, question 11 of the interview schedule (appendix 3) sought to know from the deans the *strategies their universities used to promote knowledge sharing*. The results revealed that 17 (94.4%) of respondents noted that the universities had invested in modern technology and subscribed to online journals to facilitate knowledge sharing. They added that the universities had their own journals used by the academics for scholarly publications. They also pointed out that the universities supported capacity building among staffs who were actively involved in research. They added that the universities used performance appraisal known as Open Performance Review and Appraisals (OPRAS) to reward staff who were actively involved in research, publications, and participating in national and international conferences. One respondent noted that:

*“OPRAS forces academics staff to share knowledge, despite the fact that sharing knowledge with others should be voluntary”.*

The respondents noted that public gatherings were among strategies used by the universities to promote knowledge sharing among academics. For example, at Sokoine University of Agriculture academics participated in agriculture day that is held every 8th August yearly to showcase their intellectual activities and outputs. In contrast Mzumbe University had Mwalimu Nyerere Memorial Day every year when scholars from the university and outside gather to present papers, share and exchange knowledge. Some 4 (22.2%) of the respondents felt that TV and Radio were used in some universities who had these facilities as strategies for knowledge sharing. All universities had some strategies for knowledge sharing. The respondents believed that knowledge sharing strategies in the universities were vital to encourage knowledge sharing among academics.

#### **5.2.4.2 Satisfaction of Academics with Knowledge Sharing Strategies**

Question 13 of the survey questionnaire for the academics (appendix 1) sought to know *the degree of satisfaction of academics with knowledge sharing strategies that were being used in the universities*. A five point Likert scale was provided to gather data on the level of satisfaction. The results indicated that 25 (9.6%) of respondents were very satisfied, 125 (48.3%) were satisfied, 71 (27.4%) were neither satisfied nor dissatisfied, 37 (14.3%) were dissatisfied and one (0.4%) respondent was very dissatisfied with the knowledge sharing strategies that were used in the universities surveyed. Generally the findings indicated that 150 (60%) were satisfied with strategies existing in the universities for knowledge sharing. Mzumbe academic staff were more satisfied than other universities with knowledge management and sharing strategies 35 (60%), SUA 85(59.7), SAUT 19 (56%) and UoI 11(40.7%). The results are presented in figure 15.

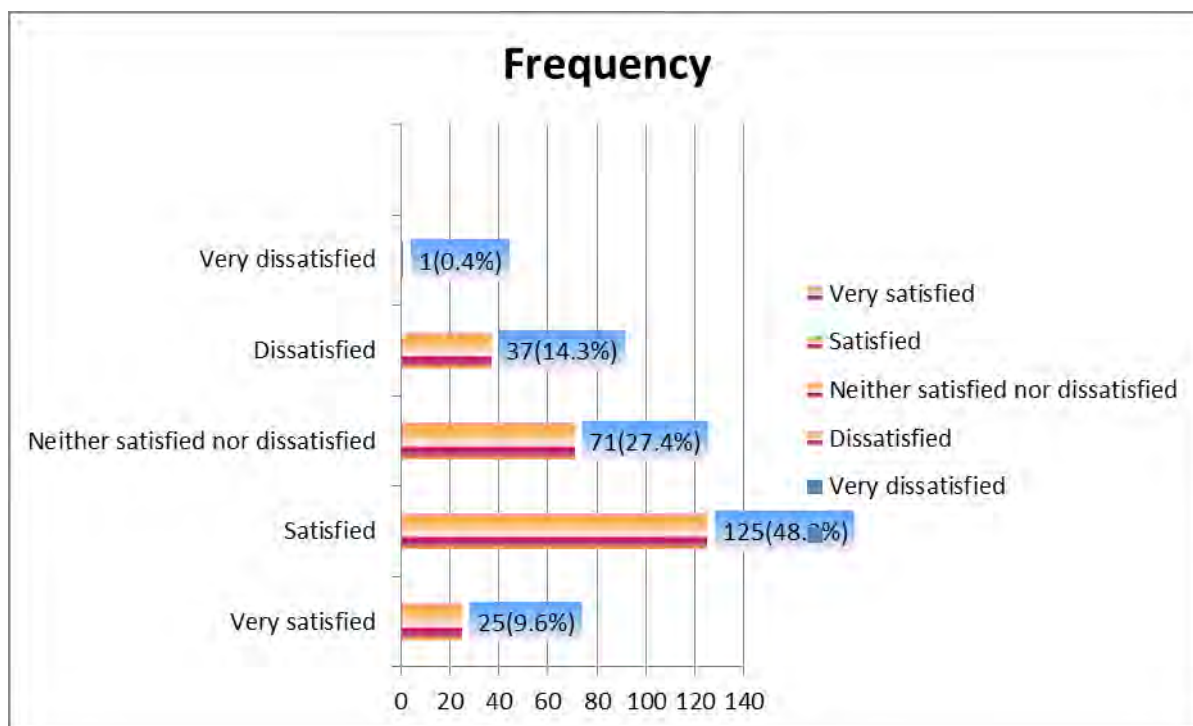


Figure 15: Satisfaction of academics with knowledge sharing strategies (N=259) (Source: Field Data, 2016)

#### 5.2.4.3 Collaborations with Other Institutions

In question 12 of the survey questionnaire (appendix 1), respondents mentioned collaborations as a strategy of knowledge sharing in the universities. The findings revealed that 76 (29.1%) of the academic staff were of the view that collaborative projects and exchange programs with other local and international universities contributed towards knowledge sharing success in the universities. In this regard, one of the specific objectives of St Augustine University of Tanzania (SAUT) research policy is to encourage regional and international collaboration in research with other universities in the world (SAUT, 2015). Muzumbe University through directorate of research and publications had established collaborative partnerships with other national and international institutions in the area of cooperative research, publication and training programmes (MU, 2015).

The respondents in the category of deans were asked in question 11 of the interview schedule (appendix 3) to also indicate how collaborative partnerships enhanced knowledge sharing in the universities. Four (22.2%) of respondents from university Sokoine University of Agriculture (SUA) pointed out that collaborations facilitate information exchange, and improved knowledge sharing among academics. Besides, collaborating partners benefited

from knowledge generated by others. It was revealed that SUA collaborates with Norwegian University of Life Sciences, Ohio State University in the United States, University of Nairobi, Jomo Kenyatta University of Agriculture and Technology and Africa Agribusiness Academy in Kenya in research and scholarly publications. Hayes and Kent (2010:140) noted that universities need to develop systems and supportive services that improve the capability to form collaborations, both within and outwardly, the universities will boom in the engine-rooms of innovation. The results of the universities collaborations are more considerable than either partner could achieve on its own.

In the interview schedule for the deans (appendix 3), the respondents further pointed out that U2 was collaborating with University of Dar es Salaam (UDSM), Tanzania Meteorological Agency (TMA), Aridhi Institute and Norwegian University of Life Sciences. In this partnership they share climate change information through Tanzania Climate Change Information Repository (TaCCIRe). The repository consists of scholarly articles, reports and theses on climatic change generated by the collaborating institutions' academics.

Question 6 of the interview schedule for the librarians (appendix 2) also asked the respondents to state how their institutions benefitted from *knowledge sharing strategies in their universities*. The 21 (70%) of respondents were of the view that collaborative linkages with other universities helped exchange of knowledge. They also pointed out that they benefitted from the Consortium of Tanzania Universities and Research Libraries (COTUL) which is responsible for joint knowledge provisional activities such as e-resources (books and journals), research training, and local journals published in universities. The knowledge sharing model asserts that organisational knowledge sharing depends greatly on the strategy an organisation pursues for competitive advantage (Hsu, 2008). The strategies affect how an organisation promotes knowledge sharing.

#### **5.2.4.4 Facilities for Knowledge Sharing in the Universities**

Question 8 of the interview schedule for the deans (appendix 3) sought to find out the *facilities that were available to promote knowledge sharing?* All 18 (100 %) respondents indicated that the facilities for knowledge sharing included ICT infrastructure such as computers, internet, institutional repositories, universities journals and libraries. In addition, in question 5 (appendix 2) results from 25 (83.3 %) librarians cited libraries, computers,

electronic and printed materials as facilities for knowledge sharing. They also pointed out that universities subscribed and accessed databases with full text journal articles such as; Cambridge Journals Online, Emerald, JSTOR, OECD library, OUP Journals, Sage Online Journals, Taylor & Francis, University of Chicago Journals, and Wiley Online Library. The U2 academics accessed and shared knowledge through TaCCiRe and Information gateway from world class collection of e-books, journals and scientific articles, HINARI, OARE, Research 4 life AGORA, TEEAL, Emerald, JSTOR, DOAJ, SAGE, Springer and SUA National Library catalogue. The findings revealed that all respondents acknowledged that the requisite facilities were available to promote knowledge sharing in the universities.

In question 8 of the interview schedule for librarians (Appendix 2) respondents were asked to explain how their library *facilitated knowledge sharing among academics*. The findings revealed that 25(83.3%) of respondents noted that the libraries are knowledge sharing spaces where teaching and training of academics in information literacy occur. Through libraries they are trained how to upload, access and share information resources available in the library. The respondents further pointed out that libraries acquired, processed, and made information resources available for access and sharing. Furthermore, an integrated Online Public Access Catalog (OPAC) and Institutional repositories (IR) were used to store and retrieve scholarly works for knowledge sharing. In the similar way, Hayes and Kent (2010:130) ascertain that the Australian Scheme for Higher Education Repositories (ASHER) initiative encouraged all Australian universities to implement institutional repositories. To conform to ASHER, the University of Melbourne ePrints Repository (UMER) operates as a knowledge repository for research produced by academics.

The librarians liaised with management, faculties and departments to support knowledge sharing. Despite these efforts, it was revealed by 5 (16.7 %) of respondents that internet connection in the universities was poor and hampered knowledge sharing in these institutions.

#### **5.2.4.5 Information Systems for Supporting Knowledge Sharing in the Universities**

Question 15 of the survey questionnaire (appendix 1) *sought an understanding of the information systems that were in place in the universities to support knowledge sharing*.

The results showed that 214 (83.6%) of the respondents acknowledged that there were information systems for sharing knowledge in their universities. Of these respondents, 28

(10.9%) were from SAUT, 112 (43.8%) from SUA, 56 (21.9%) from MU and 18 (7%) from UoI respectively. Another 31 (12.1%) of the respondents were of contrary opinion consisting of 5 (2%) from SAUT, 18 (7%) from SUA, 0 (0%) from MU, 8 (3.1%) from UoI and 11 (4.3%) who did not know whether the information systems existed in their institutions. or not. Of the respondents that did not know whether the information systems existed or not 9 (3.5%) were from SUA and 2 (0.8%) from MU. The findings revealed that all universities have information systems which supported knowledge sharing. The knowledge sharing model states that technology is an important infrastructure that facilitates and encourages knowledge sharing (Bulan & Sensuse, 2012) by linking information communication structure such as data processing, storage and communications systems (Becerra-Fernandes & Sabherwal, 2010). The results are presented in Table 20 below.

Table 20: Information systems available in the universities for knowledge sharing (N=256)

Responses		Universities				Total
		SAUT	SUA	MU	UoI	
Yes	Count	28	112	56	18	214
	% Overall	10.9%	43.8%	21.9%	7%	83.6%
	% within the university	84.8%	80.6%	96.6%	69.2%	
No	Count	5	18	0	8	31
	% Overall	2%	7%	0%	3.1%	12.1%
	% within the university	15.2%	12.9%	0.0%	30.8%	
I don't know	Count	0	9	2	0	11
	% Overall	0%	3.5%	0.8%	0%	4.3%
	% within the university	0.0%	6.5%	3.4%	0.0%	

(Source: Field Data, 2016)

### **5.2.5 Leveraging Knowledge Assets in Teaching, Research and Consultancy**

This section addresses the research question 4: *How are the academics leveraging knowledge assets in their core functions of teaching, research and consultancy?* The knowledge sharing model considers individual factor as important in promoting knowledge sharing. The individual factor in this study refers to academics who generate, use and share knowledge for teaching, research and consultancy purposes in their universities (Bulan & Sensuse, 2012; Cheng *et al.*, 2009; Kwakye & Nor, 2011).

#### **5.2.5.1 Knowledge Generated by Academics**

The deans of faculties were asked in question 4 of the interview schedule (Appendix 3) *to state the types of knowledge that was generated and shared among the academics*. All 18 (100%) respondents pointed out that academics generated explicit and tacit knowledge. They generated explicit knowledge through research reports, journal articles, and books.

Tacit knowledge was generated through work experiences and shared through daily interactions, personal contacts, discussions, and unstructured work practices. The tacit knowledge was also shared when academics performed their specific tasks in their careers.

Question 5 of the survey questionnaire (appendix 1) for academics similarly asked the respondents to state the *type of knowledge that they shared*. Findings revealed that the respondents shared both tacit and explicit knowledge. However, only 2 (0.8%) of respondents shared their tacit knowledge; compared to 154 (59%) who shared explicit knowledge. Another 105 (40.2%) shared both tacit and explicit knowledge. The results are presented in figure 16.

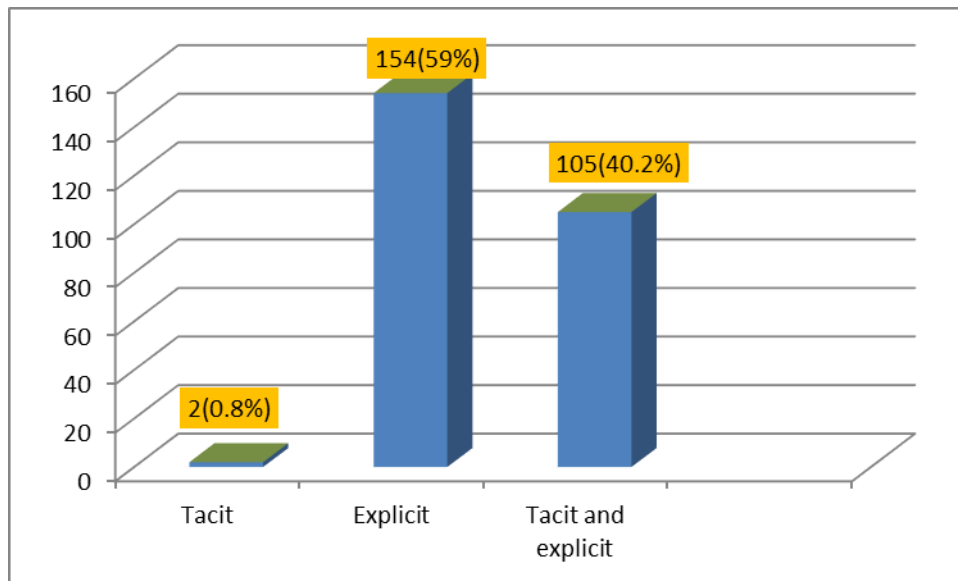


Figure 16: Types of knowledge shared by the academics (N=261) (Source: Field Data, 2016)

#### 5.2.5.2 Academics Knowledge Sharing for Teaching, Research and Consultancy

The open ended question 16 in the survey questionnaire (appendix 1) asked academics to *explain how they leveraged knowledge assets in their teaching, research and consultancy*. Some 133 (50.9%) of the respondents said they integrated explicit and tacit knowledge into their teaching, research and consultancy to improve their quality of services. They further indicated that they shared knowledge for teaching, research and consultancy. Through dissemination of research findings in workshops, meetings, conferences and publications they shared their knowledge with peers and also helped mentor junior colleagues. On the other hand 68 (26 %) of the respondents noted that knowledge assets were used to support curriculum development. They also revealed that they shared knowledge through collaborative partnerships with peers in other universities. Another 60 (23%) respondents did not respond to the question.

Question 6 in the survey questionnaire (appendix 1) asked academics *how often they shared knowledge with colleagues for teaching, research and consultancy*. The results showed that with regard to teaching 129 (49.4%) shared knowledge most often, this consists of 4 (1.5%) bachelor's degree holders, 75 (28.7%) master's degree holders and 50 (19.2%) PhD degree holders respectively. In addition, 104(39.8%) shared knowledge often, this comprised 5 (2%)



bachelor's degree holders, 51 (19.5 %) master's degree holders and 48 (18.4%) PhD degree holders respectively. Another 25 (9.6%) shared knowledge occasionally, comprising 2 (0.8%) bachelor's degree holders, 14 (5.4 %) master's holders and 9 (3.4 %) PhD degree holders respectively while 3 (1.1%) rarely shared knowledge for teaching consisting of 1 (0.4 %) bachelor's degree holders, 1 (0.4%) master's degree holders and 1 (0.4 %) PhD degree holders respectively. Generally the academics in all universities agreed that they shared knowledge for teaching purposes most often and often, UoI 27 (100%), SAUT 32 (91.5%), Mzumbe 51 (88%) and SUA 123(87.3%)

Cross tabulation was computed to determine how education qualification influenced the sharing of knowledge among academics for teaching purposes. The results indicated that 233 (89.3%) shared knowledge most often and often, this comprised bachelor's degree holders, 9 (3.4%), master's degree holders 126 (48.3 %) and PhD degree holders 98 (37.5%) shared knowledge for teaching purposes. These results are further presented in figure 17 and table 21 respectively.

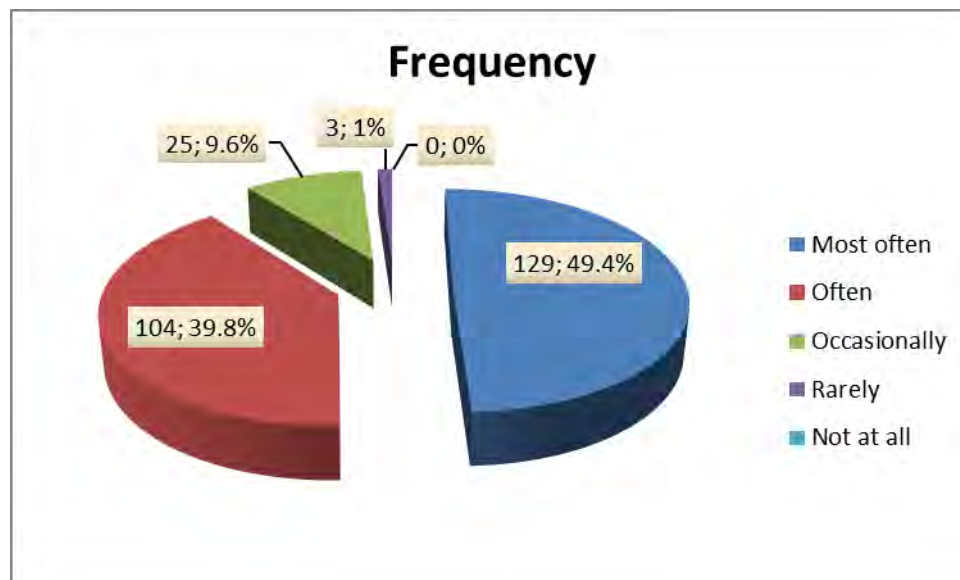


Figure 17: Academics knowledge sharing for teaching purposes (N=261) (Source: Field Data, 2016)

Table 21: Academics knowledge sharing for teaching purposes (N=261)

		Bachelor's Degree Holders	Master's Degree Holders	PhD Degree Holders	Total
Most often	Count	4	75	50	129
	% Overall	1.5%	28.7%	19.2%	49.4%
	% within level of education	33.3%	53.2%	46.3%	
Often	Count	5	51	48	104
	% Overall	2%	19.5%	18.4%	39.8
	% within level of education	41.7%	36.2%	44.4%	
Occasionally	Count	2	14	9	25
	% Overall	0.8%	5.4%	3.4%	9.6%
	% within level of education	16.7%	9.9%	8.3%	
Rarely	Count	1	1	1	3
	% Overall	0.4	0.4%	0.4%	1.2
	% within level of education	8.3%	0.7%	0.9%	
Total	Count	12	141	108	261
	% Overall	4.6%	54.0%	41.4%	100.0%
	% within level of education	100.0%	100.0%	100.0%	100.0%

(Source: Field Data, 2016)

With regard to research, the findings revealed that 66 (25.3%) of respondents shared knowledge most often, this consisted of 2 (0.8%) bachelors 'degree holders, 28 (10.7 %) master's degree holders, and 36 (13.8%) PhD degree holders respectively. Another 113 (43.3%) indicated that they shared knowledge often, this comprises 3 (1.1 %) bachelor's

degree holders, 59 (22.6 %) master's degree holders and 51 (19.5%) PhD degree holders respectively. On the other hand 67 (25.6%) shared knowledge occasionally, this comprised 6 (2.2%) bachelor's degree holders, 43 (16.5%) master's degree holders and 18 (6.9%) PhD degree holders respectively. In addition, 14 (5.4%) of respondents shared knowledge rarely for research purposes, this comprised 1 (0.4%) bachelor's degree holders, 10 (3.8%) master's degree holders and 3 (1.1 %) were PhD degree holders respectively. Another 1 (0.4 %) respondent did not share knowledge at all for research purposes. Generally the academics in all universities agreed that they share knowledge for research purposes most often and often, SUA 104 (73.8%), SAUT 24(68.6%), UoI 17 (62.9%) and Mzumbe 34 (58.6%) respectively.

Cross tabulation was computed to determine knowledge sharing pattern and qualification of the academics. The results showed that of the 179 (68.6%) academics who shared knowledge for research purposes either most often or often, there were 5 (41.7%) degree holders, master's degree holders 87 (61.7%) and PhD degree holders 87 (80.5%) respectively. Findings are presented in figure 18 and table 22 respectively.

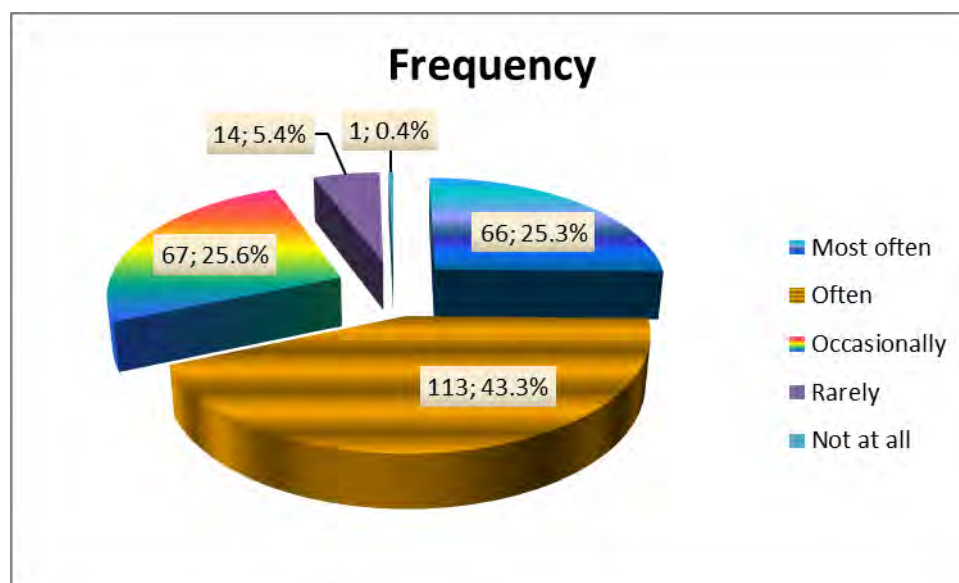


Figure 18: Academics knowledge sharing for research purposes (N=261) (Source: Field Data, 2016)

Table 22: Academics knowledge sharing for research purposes (N=261)

		Bachelor's Degree Holders	Master's Degree Holders	PhD Degree Holders	Total
Most often	Count	2	28	36	66
	% Overall	0.8%	10.7%	13.8%	25.3%
	% within level of education	16.7%	19.9%	33.3%	
Often	Count	3	59	51	113
	% Overall	1.1%	22.6%	19.5%	43.2%
	% within level of education	25.0%	41.8%	47.2%	
Occasionally	Count	6	43	18	67
	% Overall	2.2%	16.5%	6.9%	25.6%
	% within level of education	50.0%	30.5%	16.7%	
Rarely	Count	1	10	3	14
	% Overall	0.4%	3.8%	1.1%	5.3%
	% within level of education	8.3%	7.1%	2.8%	
Not at all	Count	0	1	0	1
	% Overall	0.0%	0.4	0.0%	0.4%
	% within level of education	0.0%	0.7%	0.0%	
Total	Count	12	141	108	261
	% Overall	4.6%	54.0%	41.4%	100.0%
	% within level of education	100.0%	100.0%	100.0%	100.0%

(Source: Field Data, 2016)

As far as knowledge sharing for consultancy purposes was concerned, the findings revealed that 31 (11.9%) of respondents said they shared knowledge most often for consultancy purposes, this comprised 1 (0.4%) bachelor degree holders, 16 (6.1%) master's degree holders and 14 (5.4%) PhD degree holders respectively. However, 66 (25.3%) shared knowledge often, this comprised 2 (0.8%) bachelor's degree holders, 30 (11.5%) master's degree holders and 34 (13%) PhD degree holders respectively. In addition, 102 (39.1%) shared knowledge occasionally, this comprised 6 (2.3%) bachelor's degree holders, 53 (20.3%) master's degree holders and 43 (16.5%) PhD degree holders respectively. Nevertheless 48 (18.4%) shared knowledge rarely, this comprised 2 (0.8%) bachelor's degree holders, 31 (11.9 %) master's degree holders and 15 (5.7%) PhD degree holders respectively. On the other hand 13 (5%) did not share knowledge at all for consultancy purposes, this comprised 1 (0.4%) bachelor degree holders, 11(4.2%) master's degree holders and 1 (0.4%) PhD degree holders respectively. The academics in all universities hardly shared knowledge for consultancy purposes, as show by the findings: SAUT 14 (40%), SUA 55(39%), Mzumbe 21 (36.2%) and UoI 7 (25.9) respectively.

Cross tabulation was computed to determine how often the academics with different education level shared knowledge for consultancy purposes. The results indicated that bachelor's degree holders, 3 (25%), master's degree holders 46 (32.6 %) and PhD degree holders 48 (44.5%) respectively. The results reveal that knowledge sharing for consultancy purposes is low compared to teaching and research. The results are cross tabulated in figure 19 and table 23 respectively.

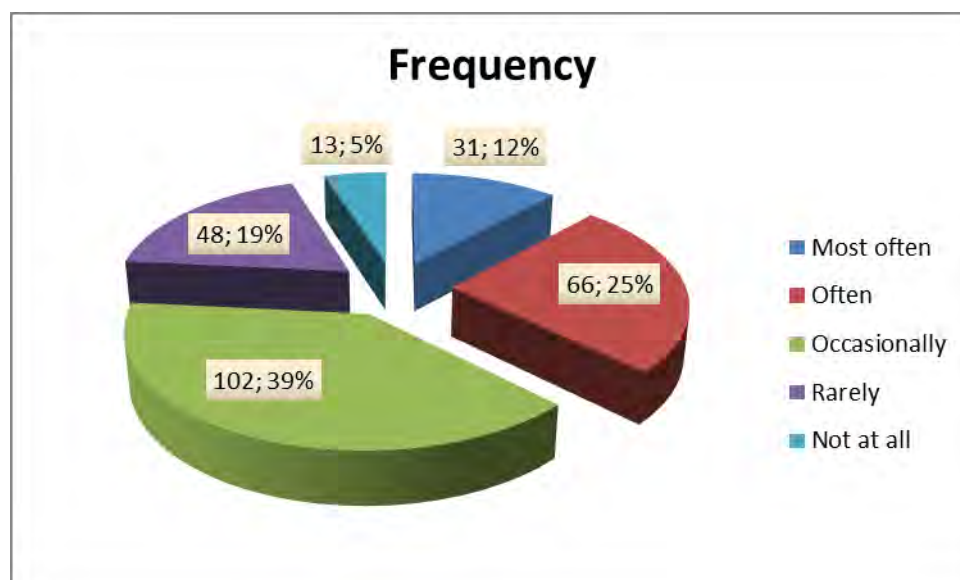


Figure 19: Academics knowledge sharing for consultancy purposes (N=260) (Source: Field Data, 2016)

Table 23: Academics knowledge sharing for consultancy purposes (N=260)

		Bachelor Degree Holders	Master's Degree Holders	PhD Degree Holders	Total
Most often	Count	1	16	14	31
	% Overall	0.4%	6.1%	5.4%	11.9
	% within level of education	8.3%	11.3%	13.0%	
Often	Count	2	30	34	66
	% Overall	0.8%	11.5%	13%	25.3%
	% within level of education	16.7%	21.3%	31.5%	
Occasionally	Count	6	53	43	102
	% Overall	2.3%	20.3%	16.5%	39.1%
	% within level of education	50.0%	37.6%	39.8%	
Rarely	Count	2	31	15	48
	% Overall	0.8%	11.9%	5.7%	18.4
	% within level of education	16.7%	22.0%	13.9%	
Not at all	Count	1	11	1	13
	% Overall	0.4%	4.2%	0.4%	5.0%
	% within level of education	8.3%	7.8%	0.9%	
Total	Count	12	141	107	260
	% Overall	4.6%	54.0%	41.4%	100.0%
	% within level of education	100.0%	100.0%	100.0%	100.0%

(Source: Field Data, 2016)

To buttress the above results question 13 of the interview schedule for the deans (appendix 3) sought to understand *if the universities encouraged research, consultancy and publications as a way of knowledge sharing*. All the deans who were interviewed, 18 (100%) indicated that their universities encouraged and supported research, consultancy and publications. Through knowledge sharing academics staffs were enabled to conduct research and consultancy in order to generate new knowledge which they shared with others through publications.

### **5.2.6 Attitude and Willingness of Academics to Share Knowledge**

This section addresses the fourth research question: *What are the attitudes of academics towards knowledge sharing*. Knowledge sharing model explains that individuals' attitude, willingness and awareness are important for people to share knowledge (Bulan & Sensuse, 2012; Fink & Gururajan, 2010; Noor, & Salim, 2012; Yang, 2008).

#### **5.2.6.1 Attitudes of Academic Staff Towards Knowledge Sharing**

Question 17 of the survey questionnaire sought to find out *attitude of academics toward knowledge sharing*. The results revealed that 162 (62.1%) of respondents were very positive about knowledge sharing, 93 (35.6%) were positive about knowledge sharing. However 5 (1.9%) were neutral, and another 1 (0.7%) had negative attitude towards knowledge sharing. The findings generally suggest that 255 (97.7%) of academics had positive stance towards knowledge sharing. The academics from three universities had positive attitude towards knowledge sharing as shown by SAUT 24 (68.6%), Mzumbe 37(63.8%) and SUA 88 (62%) respectively. Only one academic staff from UoI noted that had negative attitude. The findings are further presented in figure 21. Similarly, question 9 of interview schedule for the librarians (appendix 2) sought their *opinion on the attitude of academics towards knowledge sharing*. The librarians generally felt the attitudes of academics towards knowledge sharing were positive. The knowledge sharing model asserts that individual attitude towards knowledge sharing is vital (Bulan & Sensuse, 2012).

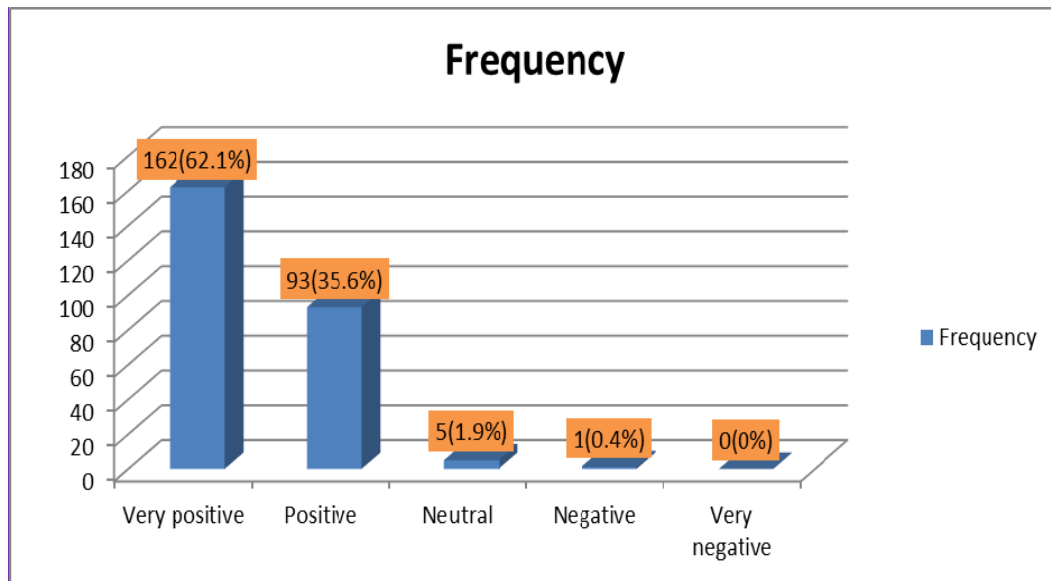


Figure 20: Attitudes of academic staff towards knowledge sharing (N=261) (Source: Field Data, 2016)

Question 18 of the survey questionnaire for the academics (appendix 1) furthermore sought to know *if the academics were willing to share knowledge*. The results indicated that 260 (99.6%) of respondents were willing to share knowledge while only 1 (0.4%) was not willing to share knowledge. The findings revealed that the respondents were willing to share knowledge because of the importance of knowledge sharing to the universities and to the academics life. The findings are further presented in figure 21.

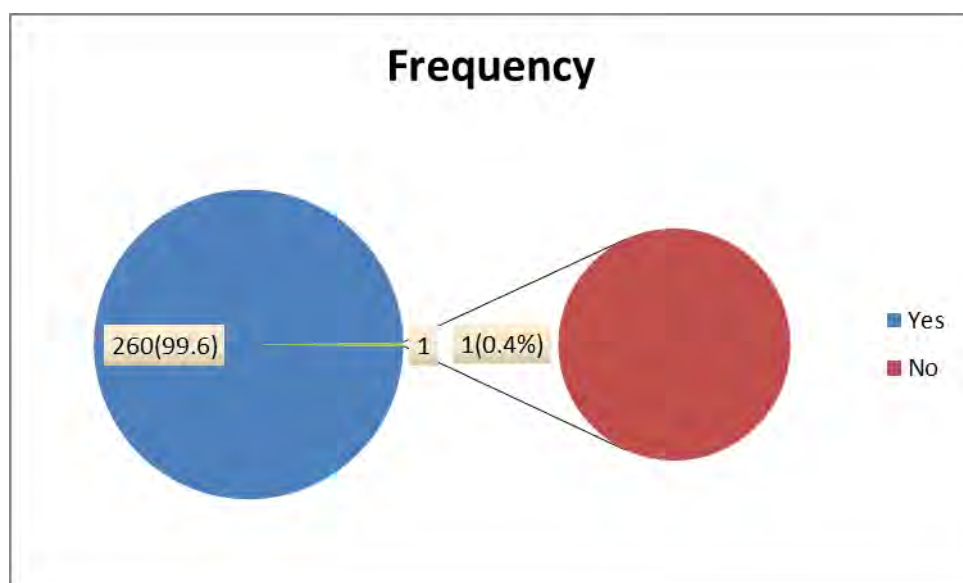


Figure 21: Academic's willingness to share knowledge (N=261) (Source: Field Data, 2016)



Question 6 of the interview schedule for the deans (appendix 3) also sought their opinion of whether *academics were willing to share knowledge*. The respondents 18 (100%) were of the opinion that academics were willing to share knowledge. One of the respondents noted:

*“If the lecturers do not make use of their knowledge it soon loses its value”.*

In response to question 4 of the survey questionnaire (Appendix 1) which asked: “*With whom are you sharing knowledge*”? The findings showed that 259 (99.2%) shared knowledge with academic staff within their universities, 255 (97.7%) shared knowledge with students, 162 (62.1%) shared knowledge with academic staff from other universities and 37 (14.2%) shared knowledge with researchers and other people in the community. Findings presented in figure 22 below.

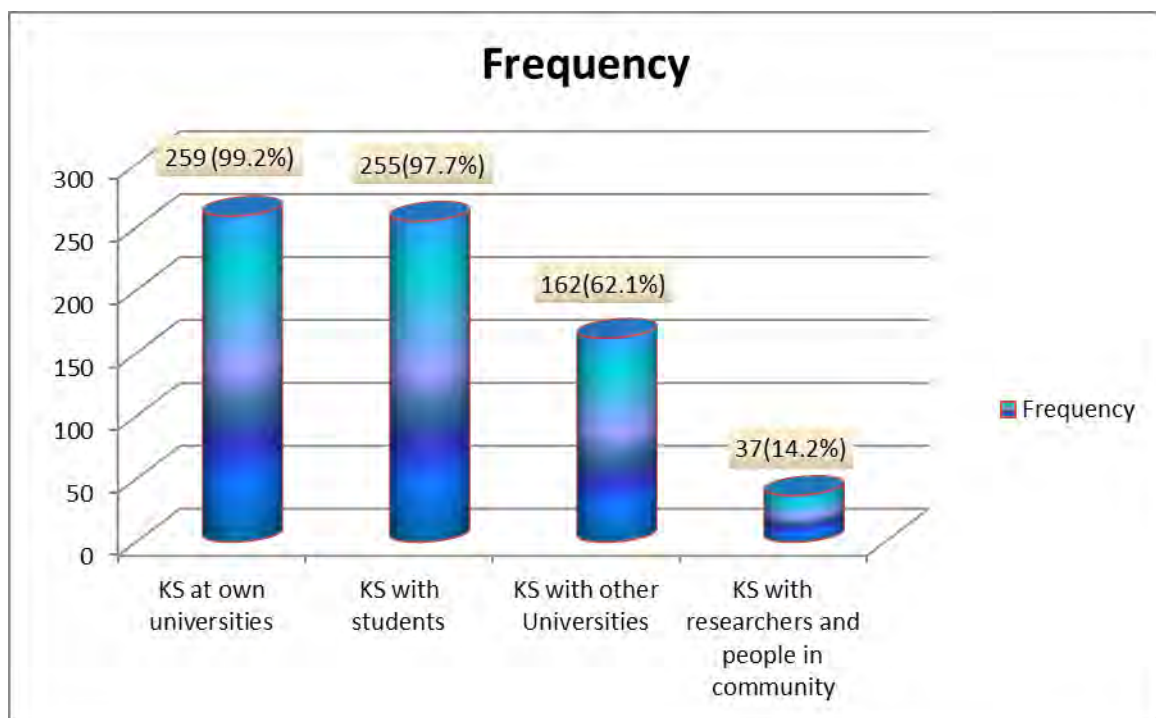


Figure 22: Individuals with whom academics share knowledge (N=261) (Source: Field Data, 2016)

### 5.2.7 Level of Awareness of Academics about Knowledge Sharing

In question 8 of the survey questionnaire for the academics (appendix 1), they were asked the *extent to which they were aware of knowledge management and sharing*.

A five Likert scale was used to measure their level of awareness about knowledge sharing. The results indicated that 40 (15.3%) were aware of knowledge management to a very great

extent, 81 (31%) to a great extent, 98 (37.5%) to a moderate extent, 39 (15%) to a small extent and 3 (1.1%) did not have any awareness about knowledge management.

With regard to the concept of knowledge sharing 74 (28.4%) were aware of the concept to a very great extent, 112 (43%) to a great extent, 63 (24.1%) to a moderate extent, 9 (3.4%) to a small extent and 3 (1.1%) were not aware of the concept of knowledge sharing. The findings indicated that academic staffs are aware of the concepts of knowledge management and sharing. The knowledge sharing model advocate creating awareness of the importance of knowledge sharing in order to nurture positive attitude towards sharing the knowledge (Bulan & Sensuse, 2012). The results are presented in table 24.

Table 24: Level of awareness of academics about knowledge management and sharing (N=261)

	A very great extent	A great extent	A moderate extent	A small extent	To no extent
	Frequency and %	Frequency and %	Frequency and %	Frequency and %	Frequency and %
Knowledge management	40 (15.3%)	81 (31%)	98 (37.5%)	39 (15%)	3 (1.1%)
Knowledge sharing	74 (28.4%)	112 (43%)	63 (24.1%)	9 (3.4%)	3 (1.1%)

(Source: Field Data, 2016)

### 5.2.8 Importance of Knowledge Sharing: Academics Perspectives

Question 20 of the survey questionnaire for academics (Appendix 1) sought to know the extent to which academics were aware of the importance of knowledge sharing. The results revealed that 203 (77.8%) believed that knowledge sharing improves quality of teaching, research and consultancy. They also felt that knowledge sharing enabled academics to share expertise and add knowledge to what they already know. They added that knowledge sharing promotes learning and reading culture, broadens understanding of the academics and helps in solving social and economic problems in universities by putting in practice the knowledge acquired. They added that knowledge sharing promotes knowledge production in the universities.

In addition, 177 (67.8%) of the respondents indicated that knowledge sharing builds trust among academics and strengthens their cooperation. It also encourages interpersonal relationship and creates networking among academics. Furthermore, 67 (64%) respondents felt that knowledge sharing fosters academic performance by inspiring new knowledge production among academics. Some 119 (45.6%) of the respondents noted that knowledge sharing promotes professional development and builds academic team work. Another 89 (34.1%) were of the opinion that knowledge sharing facilitates innovation by encouraging free flow of ideas which in turn contributes to the development of the universities.

Moreover 72 (27.6%) of respondents believed that knowledge sharing encourages scholarly work and motivates young scholars to publish and share their knowledge, 68 (26.1%) noted that knowledge sharing updates academics with current issues, and uncovers the hidden knowledge. Another 50 (19.4%) of respondents noted that knowledge sharing promotes and increases visibility of the university both locally and internationally through publications and conferences. In addition, 44 (16.9%) of respondents were of the opinion that knowledge sharing reduces cost of electronic resources. Further, 15 (5.7%) of the respondents were of the opinion that knowledge sharing gives exposure to academics, especially when they publish Journal articles, books and research findings. The findings are further presented in table 25.

Table 25: Importance of knowledge sharing: academics perspectives (N=261)

Responses	SAUT Frequency	SUA Frequency	MU Frequency	UoI Frequency	Total
Improve quality of teaching and research	28 (10.7%)	107 (41%)	50 (19.2%)	18 (6.9%)	203 (77.8%)
Knowledge sharing builds trust among academics	19 (7.3%)	95 (36.4%)	42(16.1%)	21(8.1%)	177 (67.8%)
Knowledge sharing foster academic performance and growth of the universities	21(8%)	78(30%)	51(19.5%)	17(6.5%)	167 (64%)
Knowledge sharing promotes professional development, and builds teamwork among faculty members	12(4.6%)	63(24.1%)	34(13%)	10(3.8%)	119 (45.6%)
Knowledge sharing facilitates innovation by encouraging free flow of ideas which support vision of the universities	9(3.4%)	37(14.2%)	29(11.1%)	14(5.4%)	89 (34.1%)
Encourages scholarly work and motivate young scholars to publish and share	6(2.3%)	33(12.6%)	25(9.6%)	8(3.1%)	72 (27.6%)
Update academics with current issues, and uncover the	12(4.6%)	27(10.3%)	15(5.7%)	14(5.4%)	68 (26%)

hidden knowledge and fill knowledge gap					
Knowledge sharing promotes and increases visibility of the university image both locally and internationally	7(2.7%)	18(7%)	20(7.7%)	5(2%)	50 (19.4%)
Knowledge sharing reduces costs of operation	5(2%)	16(6.1%)	22(8.4%)	1(0.4%)	44 (16.9%)
Knowledge sharing gives exposure to the academics	2(0.8%)	6(2.3%)	4(1.5%)	3(1.1%)	15 (5.7%)

(Source: Field Data, 2016)

Moreover the academics revealed the importance of knowledge sharing in question three of the survey questionnaire (appendix 1) which *sought to determine if the academics share knowledge*, 260 (99.6%) of the academics responded that they share knowledge with others. This comprised 226 (86.6%) share either often or most often, 33 (12.6%) shared occasionally and 2 (0.8%) they shared rarely. However, only 1 (0.4%) responded did not share knowledge because of limited time, lack of motivation and trust among academics. The findings presented in figure 23 below.

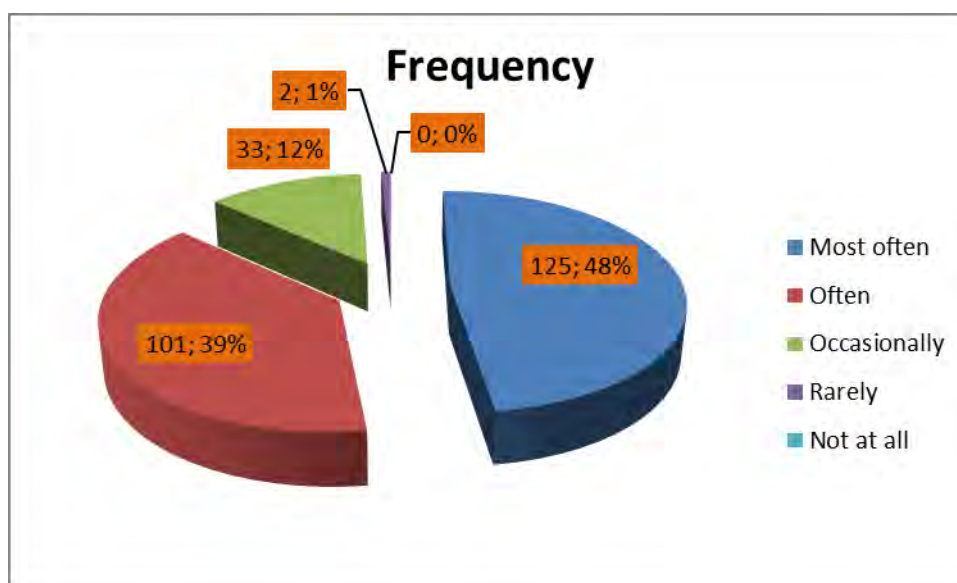


Figure 23: How often academics share knowledge (N=261) (Source: Field Data, 2016)

### 5.2.9 Factors Influencing Knowledge Sharing Among Academics

This part addresses the research question 6: *What factors influence knowledge sharing among academics in Tanzanian universities*. Similarly question 19 of the survey questionnaire for the academics (appendix 1) sought to understand factors that influence knowledge sharing among academics. The knowledge sharing model presents three major factors that influence knowledge sharing: organisational, technological and individual factors (Fullwood *et al.*, 2013; Ismail & Yosof, 2008; Israilidis, *et al.* 2015; Kwakye & Nor, 2011; Noor & Salim, 2012).

#### 5.2.9.1 Organisation Factors

The respondents outlined several organisational factors such as management support 164 (62.8%), rewards 150 (57.5%), organisational culture 163 (62.5%), motivation 158 (60.5%), universities policy on knowledge sharing 162 (62.1), and incentives 128 (49%). In question 7 of the interview schedule for librarians (appendix 2) 19 (63.3% of respondents noted that universities management support was a big factor influencing knowledge sharing among academics.

### 5.2.9.2 Technological Factor

On the technological factor, 223 (85.4%) respondents noted that information technology had great influence on knowledge sharing. In questions 8 and 14 respectively of the interview schedule for deans all 18 (100%) respondents indicated that the universities were improving ICT facilities to boost knowledge sharing practices.

Question seven of the interview schedule for the librarians also sought to understand from their perspective *factors that influence knowledge sharing among academics*. The findings revealed that 26 (86.7%) of respondents were of the view that Information Communication Technology (ICT) influenced knowledge sharing. The results concurred to the similar study on knowledge sharing among academics in selected universities in Nigeria and south Africa, majority of the academics agreed that ICT influenced knowledge sharing (Fari & Ocholla, 2015). Such ICTs include computers, web 2.0, social networks such as twitter and face book; universities websites and institutional repositories. They pointed out that ICT supports access, retrieval, sharing and creation of knowledge.

The responses from the survey questionnaire for the academic staff 223 (85.4%), interview schedule for the deans 18 (100%) and interview schedule for the Librarians 26 (86.7%) showed that the technology influenced knowledge sharing.

### 5.2.9.3 Individual Factors

Regarding individual factors that influence knowledge sharing the respondents outlined personal expectation 200 (76.6%), individual attitude towards 251 (96.2%), trust among academics 180 (69%), and personal interactions 230 (88.1%).

Furthermore in question 7 of the librarian's interview schedule (appendix 2), the respondents were asked to state in their opinion what factors influenced knowledge sharing among academics. Some 17 (56.7%) pointed out that personal expectation and efforts, self confidence in writing and publishing, awareness of academic staff about knowledge sharing, and personal attitudes of academic staff influenced knowledge sharing. The findings above indicated that organisational, technology and individual factors influenced knowledge sharing in the universities. The findings are further presented in figure 24 and table 26 below respectively.

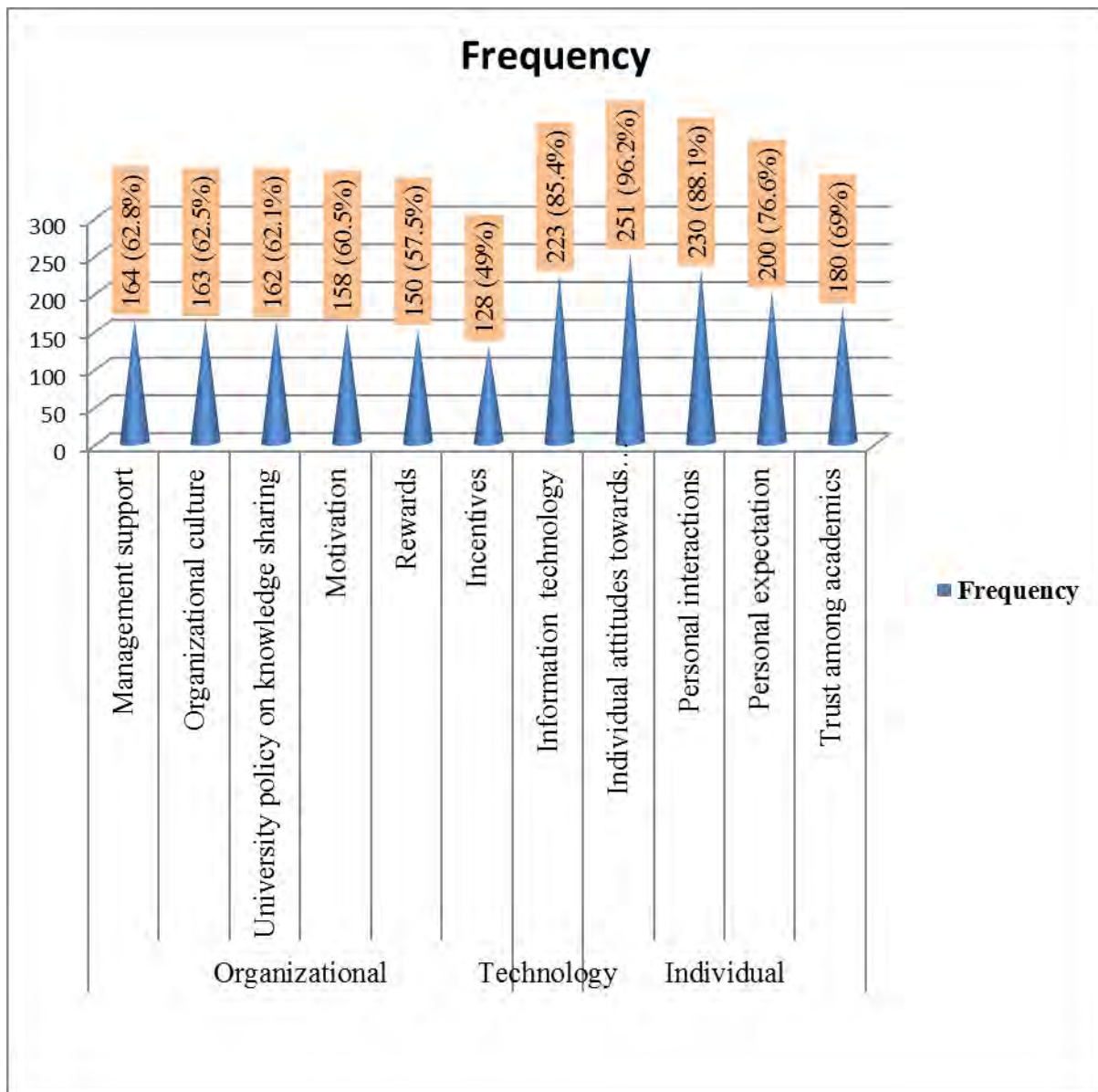


Figure 24: Factors influencing knowledge sharing (N=261) (Source: Field Data, 2016)



Table 26: Factors influencing knowledge sharing (N=261)

Factors		SAUT Frequency	SUA Frequency	MU Frequency	UoI Frequency	Total
Organisational	Management support	23 (8.8%)	88 (33.7%)	42 (16.1%)	11 (4.2%)	164 (62.8%)
	Organisational culture	28 (10.7%)	68 (26.1%)	51 (19.5%)	16 (6.1%)	163 (62.5%)
	University policy on knowledge sharing	30 (11.5%)	61 (23.4%)	49 (18.8%)	22 (8.4%)	162 (62.1%)
	Motivation	18 (6.9%)	84 (32.1%)	37 (14.2%)	19 (7.3%)	158 (60.5%)
	Rewards	33 (12.6%)	77 (29.5%)	28 (10.7%)	12 (4.6%)	150 (57.5%)
	Incentives	21 (8%)	66 (25.3%)	31 (11.9%)	10 (3.8%)	128 (49.0%)
Technology	Information technology	29 (11.1%)	135 (51.7%)	39 (14.9%)	20 (7.7%)	223 (85.4%)
Individual	Individual attitudes towards knowledge sharing	34 (13%)	137 (52.5%)	55 (21.1%)	25 (9.6%)	251 (96.2%)
	Personal interactions	31 (11.9%)	125 (47.9%)	50 (19.1%)	24 (9.2%)	230 (88.1%)
	Personal expectation	32 (12.3%)	88 (33.7%)	53 (20.3%)	27 (10.3%)	200 (76.6%)
	Trust among academics	24 (9.2%)	90 (34.5%)	49 (18.8%)	17 (6.5%)	180 (69.0%)

Source: Fiel Data, 2016)

#### **5.2.10 General Comments by Respondents on Knowledge Sharing Among Academics**

In question 21 of the survey questionnaire for academics (appendix 1) the respondents were asked to make any other observations on knowledge sharing among academics in the universities that were studied. Some 146 (55.9%) of the respondents pointed out that knowledge sharing should be part of academic life, in order to broaden academics mind in teaching, research and consultancies. They also pointed out that knowledge sharing should be encouraged by universities through establishment of more scholarly Journals to allow more academics to publish. They advocated for training of academics to promote knowledge sharing practices. They also expressed the need for more funding to enhance research and knowledge production. They believed that Knowledge sharing and exchange should be promoted beyond individual universities. They felt universities needed to create conducive environment for knowledge sharing through promotion, rewards/incentives and infrastructure development.

Efforts must also be directed at ensuring that knowledge hoarding culture is discouraged and academics are educated on the importance of free flow and sharing of knowledge to create a truly knowledge-based society. In addition, enabling policies on knowledge sharing should be developed by universities to encourage knowledge sharing among academics. The universities should align the knowledge sharing effort with the university's academic strategies for good performance of the universities. Lack of knowledge sharing leads academics to loose and perish. My people are perishing for lack of knowledge (Hosea 4:6)

#### **5.2.11 Summary**

This chapter presented the findings on knowledge sharing among academics in selected universities in Tanzania. The findings were presented based on themes resulting from the research questions covering University organisational culture and knowledge sharing among academics, University support of knowledge creation and sharing, knowledge sharing strategies, leveraging knowledge assets in teaching, research and consultancy, attitudes of

academics towards knowledge sharing, and factors influencing knowledge sharing among academics.

The study revealed that knowledge sharing is practiced in universities to a certain extent, despite lack of knowledge sharing policies, lack of knowledge management units for knowledge sharing and lack funding to support knowledge sharing practices. The universities through the directorate of research, publications and postgraduate studies encourage knowledge sharing but much more is needed especially with regard to improving ICT infrastructure, encouraging academics to conduct research and consultancy, establishing universities journals, conducting workshops and training on research and publishing skills. Despite positive attitudes towards knowledge sharing some academics were hoarding knowledge in the belief that this would give them a competitive edge. The study revealed that knowledge sharing is indispensable because it enables universities to enhance innovation performance, improve learning and teaching skills and reduce unnecessary learning efforts.

## **CHAPTER SIX**

### **DISCUSSION OF FINDINGS**

#### **6.1 INTRODUCTION**

This chapter interprets and discusses the results of the research that were analyzed and presented in chapter five. According to Stangor (2015:312), discussion chapter reviews main findings and provides interpretation of their meaning and integrates them with other research. Additionally the chapter emphasises what is new and important about the findings. Fain (2013:272) notes that the discussion chapter involves organising and explaining the meaning of the findings gathered from both quantitative and qualitative methods. In quantitative research upshot of statistical tests are included to support the results. LoBiondo-Wood and Haber (2014) pointed out that in interpretations and discussion chapter the researcher makes data come alive by deducing and discussing the results. Krysik and Finn (2013); Hanneman, Kposowa and Riddle (2013:13) also assert that the chapter should summarise the major findings and consider their meaning, importance and implications to the society.

The purpose of this study was to investigate the status of knowledge sharing in universities in Tanzania. The study sought to address the following research questions:

1. How does organisation culture promote or hinder knowledge sharing among academics in the universities?
2. To what extent do universities in Tanzania support knowledge creation and sharing among academics?
3. What knowledge sharing strategies exist in the universities?
4. How are the academics leveraging knowledge assets in their core functions of teaching, research and consultancy?
5. What are the attitudes of academics towards knowledge sharing?
6. What factors influence knowledge sharing among academics in Tanzanian universities?

The respondents were academics, Deans of faculties and Librarians from four Tanzanian Universities namely; St Augustine University of Tanzania, Sokoine University of

Agriculture, Mzumbe University and University of Iringa respectively. The SAUT and UoI are private while SUA and MU are public universities. The study was underpinned by the knowledge sharing model. The post positivist paradigm was applied with quantitative and qualitative approaches. The same approaches were used in the similar study on knowledge sharing among academics in selected universities in Nigeria and South Africa (Fari & Ocholla, 2015).

Survey questionnaires were administered to 291 academics from which 261 were completed and returned, yielding a response rate of (89.6%). Interviews were administered to 18 (90%) deans of faculties out of 20 who were targeted. Furthermore, 30 (73.17%) librarians were interviewed out of 41 respondents that were targeted. The study attracted a high response rate of 73.1% to 90% from all categories of respondents. The high response rate was ascribed to follow-ups with the respondents to make sure they completed and returned the questionnaires and were available for interviews.

Jacque *et al* (2016:164) and Bryman (2012:224) state that the acceptable response rate should be at least 60 %. They further point out that response rates can be ranked: 60-69%- acceptable, 70-85%- very good and 85% and above- excellent. Rubin and Bellamy (2012) suggest 50% as the acceptable level of response. Jacque *et al* (2016:164) point out that low response rates do not lend themselves to any advanced statistical analysis and should be avoided. Therefore, the response rate in the current study was very good. The overall response rates for all respondents were (N=309); academics 261 (84.5%), deans 18 (5.8%) and the librarians 30 (9.7%) as depicted in table 13 in chapter five of this thesis.

The sections 6.2 to 6.8 present interpretation and discussion of the findings.

## **6.2 Biographical Information**

The academics were required to provide biographical information in the survey questionnaire. The findings depicted in table 9 in chapter five showed that the majority of academic staff had master's degrees 141 (54.1%) followed by 108 (41.3%) who had PhD degrees and 12 (4.6%) who were holders of Bachelor degrees. The results are consistent with requirements that academic staff should possess Masters or PhD degrees to be hired as lecturers. The academics with bachelor's degrees would normally be mentored into lecturer positions once

they acquire their Master's degrees. The results reveal that PhD holders were in the minority compared to those who were holders of master's degrees. This result points to paucity of researchers at the universities. This may negatively affect the quality and quantity of research and publication outputs as these functions are largely performed by academics that hold PhD degrees.

In addition, the study sought to find out the highest academic qualification of the deans of faculties. The results revealed that the deans in the four universities were either master's degree holders or PhD degree holders as revealed by results in table 10 in chapter five. Majority of the deans 13 (72.2%) possessed PhD degrees while 5 (27.8%) possessed master's degrees. The deans provide academic leadership in the faculties and usually have qualifications especially PhDs. The private universities seemed to have fewer academics including deans with PhD degrees. They therefore employed academics with master's degree in the positions of deans.

The study also sought the highest academic qualifications of the Librarians in the four universities. The results revealed that 11 (36.7%) were bachelor's degree holders, 16 (53.3%) were master's degree holders and PhD degree holders 3 (10%) respectively as revealed by findings presented in table 11. The results indicated that the majority of the librarians were master's degree holders followed by bachelor degree holders and minority were PhD degree holders respectively. Generally university librarians in Tanzania tend to employ professional librarians who hold master's degree. Holders of first degree are often categorised as library assistants or paraprofessional staff. However, some universities hired bachelor degree holders as professional librarians if the degree possessed was in librarianship. Irrespective of the qualifications of the librarians, their participation in knowledge sharing activities in all the universities was found to be largely the same.

### **6.3 Universities Organisational Culture**

The study sought to know if organisational culture promoted or hindered knowledge sharing among academics in the universities surveyed. The knowledge sharing model considers organisation culture as an enabler for the creation, transfer, and sharing of knowledge (Lin, 2007; Riege, 2005). This section discusses how organisational culture and organisation structure promoted or hindered knowledge sharing in the universities.

### 6.3.1 Organisational Culture

The academics were asked to state if their individual university cultures promoted knowledge sharing among academics. Majority 224 (86.1%) of academic staff were of the views that their universities promoted culture of knowledge sharing while 35 (13.5%) respondents were of contrary view. Another 1 (0.4%) did not know if their universities promoted culture of knowledge sharing or not. The findings suggest that organisational culture promoted knowledge sharing. This result is consistent with the knowledge sharing model which asserts that organisation culture is an enabler for the creation, transfer, and sharing of knowledge. The findings showed the commitment of the universities to knowledge motivated academics to generate, share and utilise knowledge within and outside the universities. The results compare well with those of Sandhu, Jain and Ahmad (2011) who found that 75 (44.2 %) of the respondents in their study either agreed or strongly agreed with the statement that the existing culture in the department supported knowledge sharing.

According to Jones, Cline and Ryan (2006) organisational culture is considered a key aspect of a successful knowledge sharing activity. Organisational culture that espouses knowledge sharing leads to organisational effectiveness (Zheng, Yang, & McLean, 2010). Besides as Issa and Haddad (2008) point out that organisational culture is related to mutual trust between employees. Wiewiora (2013) asserts that organisation culture fosters a relationship of trust between peers in institutions and enhances knowledge sharing. Muchaonyerwa (2015) points out that knowledge sharing can become a culture in the university if top management frequently demonstrate and reinforce the theme that knowledge is the lifeblood of the academic endeavor of the university.

Cross tabulation was computed to find out the perception of academics with different level of education of how their universities promoted culture of knowledge sharing. The findings revealed that majority of academics with different level of education agreed that organisational culture promotes knowledge sharing as reflected by academics who were holders of bachelor's degree 9 (75%), masters' degree holders 122 (86.5%) and PhD degree holders 93 (86.9%) respectively as show in figure 9 and table 12. The result suggests that academic staff were aware that the universities promoted culture of knowledge sharing.

A study on knowledge generation and sharing in UK universities by Howell and Annansingh (2013) found that in order for knowledge sharing to take place, the institution must have a culture to cultivate and promote knowledge creation and sharing. Another study by Jo and Joo (2011), which investigated the effects of learning organisation culture on knowledge-sharing found that organisational culture is important in knowledge sharing, it influences employees' perception and behaviors that are central to knowledge creation and sharing. The study further confirms that organisational culture is a fundamental factor that affects knowledge sharing. Ajmal and Helo (2010) added that organisation culture can have long term impact on organisations' performance. Egan, Yang, and Bartlett (2014) found that knowledge sharing requires an organisation-wide culture that assimilates people and the organisation's structure to move the organisation in the direction of continuous learning and change.

The academics were asked how they believed their organisations promoted culture of knowledge sharing. The results suggest that the organisations promoted culture of knowledge sharing through different ways such as workshops 108 (41.5%), research 100 (38.5%), seminars 86 (33.1%), publications 77 (29.6%), presentations 73 (28.1%), meetings 44 (16.9%), public lectures 35 (13.5%), forums 34 (13.1%) and conferences 33 (12.7%). The other ways their organisation promoted knowledge sharing included institutional repositories 30 (11.5%), training 27 (10.4%) and colloquia 14 (5.4%) as reflected in figure 10 and table 13 respectively. The results suggest that workshops, research, seminars and publications were the most widely used means by the academics to share knowledge. Similarly, Abbas (2015) in a study of KM strategies and practices in Nigeria agricultural research institutes found that the institutes promoted culture of knowledge sharing through seminars, workshops, meetings and conferences.

A study was conducted in Bahrain organisations to investigate the role of certain factors of organisational culture in determining the success of knowledge sharing by Al-Alawi, Al-Marzooqi and Mohammed (2007) and found that people share knowledge through collaboration (66.2%), training (49.8%), communication networks (44.3%), chatting during break time (38.8%), brain storming (36.3%), workshops (34.8%), seminars (25.4%) and



conferences (21.9). Almost 66% indicated that collaboration used to enhance knowledge sharing followed by training by 49%.

Another study by Sohail and Daud (2009), which sought to examine the factors and barriers that contribute to successful knowledge sharing among the university teaching staff in Malaysia found that the universities shared knowledge through, training, team work, conferences, workshops and colloquia. The study recommended the need for university management to encourage their lecturers to share knowledge in order to enhance efficiency in their universities.

Additionally, all 18 (100 %) dean of faculties revealed that the universities promoted a culture of knowledge sharing by building a sense of trust among academics. Al-Alawi, Al-Marzooqi and Mohammed (2007) in a related study found that when trust exists in the organisations, employees share the knowledge. Trust among knowledge sharers builds confidence and removes doubts thus enabling academics to cooperate and freely share knowledge. In contrast lack of trust among academics contributes to knowledge hoarding.

The deans of faculties also noted that trust between management and academics encouraged a culture of knowledge sharing. The results also revealed that top down and bottom up communication between leaders and academics promoted culture of knowledge sharing. Moreover, the results revealed that interpersonal skills and verbal/written communication contributed to successful knowledge sharing. The results also revealed that the universities encouraged knowledge sharing by supporting academics to facilitate workshops and conferences to exchange and share knowledge. The deans of faculties also pointed out that the universities were improving ICT infrastructure to encourage and facilitate knowledge sharing.

The librarians were similarly asked how their universities promoted a culture of knowledge sharing. The findings revealed that; 19 (63.3%) were of the opinion that the universities encouraged their academic staff to conduct research and publish the research findings. The universities also provided funds to enable scholars pay for page fees for publication of their scholarly work and that universities were investing in ICT infrastructure to promote knowledge sharing. The findings showed that the universities generally promoted a culture of knowledge sharing by encouraging research and publications and investing in ICT.

Abdillah (2014) points out that growth of universities depends on how they manage and disseminate knowledge by using new technology to support research and teaching.

Generally, the results indicated that majority from three categories of the respondents affirm that the universities promoted culture of knowledge sharing as reflected by academics 224 (86.1%), deans of faculties 18 (100%) and Librarians 19 (63.3%). Through sharing knowledge sharing universities are able to enhance their efficiencies and competitive advantage globally. Therefore, the findings revealed the commitment of the universities on knowledge management and sharing among academics.

The respondents from two categories who were of contrary opinion that the universities did not promote a culture of knowledge sharing had their reasons. For example, 21 (8.1%) academics and 11 (36.7%) librarians said universities' management did not provide support for knowledge sharing because universities' priority was teaching; another 12 (4.6%) academics and 11 (36.7%) librarians indicated that the universities did not promote a culture of knowledge sharing because of financial constraints. Moreover 13 (5%) academics indicated that government does not support knowledge sharing in the universities as government does not allocate funds to support research and training in the universities.

The respondents indicated that the universities overloaded academic staff with teaching responsibilities leaving little time for them to conduct research, consultancy and publishing that would promote knowledge sharing. Gale (2011) similarly asserts that academics in universities are strongly focusing on teaching activities at the expense of research, publications and consultancy. Chweya, Bosire and Nyanganyi (2014) assert that increasingly students enrollment, has placed huge teaching load on academics leaving them with little time for other core responsibilities such as research and consultancy. In addition knowledge sharing among academics was hampered because top management did not allocate adequate to promote knowledge sharing. Jacobs and Mutula (2008) assert that managing and sharing knowledge is about creating an environment and culture within an organisation that encourages the creation, sharing and transfer of knowledge. This requires creative managers and motivated employees who can sit together, put strategies that promote a culture of knowledge sharing (Mayekiso, 2013). Probst, Raub and Romhardt (2000) also suggest that universities have to maintain a knowledge-based culture of knowledge sharing in order to remain competitive.

### 6.3.2 Organisation Structure

The respondents were asked to give opinions on how their organisation structures promoted knowledge sharing. All 18 (100%) deans of faculties said the organisation structures in the universities did not have units to promote knowledge sharing. They however acknowledged that academics were enabled by directorates of research and publications to share knowledge. It was also revealed that deans of faculties and heads of departments encouraged academics to publish their scholarly works and share them with their colleagues. They also pointed out that the directorate of research and publications through faculties and departments provided support to the academics especially with regard to supporting conference and workshops. They further pointed out that interaction across departments, faculties and management through workshops facilitated knowledge sharing among academics. Noor and Salim (2011) advocated for an office plan that could create a work environment that encourages knowledge sharing through interactions among academic staff. Such interactions would build trust to enable staff share knowledge.

The knowledge sharing model states that organisational structure is a significant cultural component that influences knowledge sharing (Al-Adaileh, 2011; Al-Alawi *et al.*, 2007). Flexible organisational structures encourage collaboration across boundaries within the universities that lead to effective knowledge sharing (Gold *et al.*, 2001; Mueller, 2014). Kim and Lee (2006) noted that knowledge sharing is facilitated by having less centralised organisational structures that encourage communication across departments. This same view is echoed by Syed and Rowland (2004) who revealed that knowledge sharing is made successful by support structure that allows the flow of information between divisions seamlessly. The findings of the current study revealed that though universities did not clearly discuss their organisation structure, they used Directorates of research and publications to promote knowledge sharing. They in this regard lacked well defined units dedicated to knowledge sharing thus hindering knowledge sharing in the universities. Tippins (2003) points out that organisational structures of universities may become barriers to knowledge sharing if not properly structured. The findings revealed that the universities lacked structures that would enhance knowledge sharing. This was exacerbated by the fact that the universities did not have enabling strategic plans to engender knowledge sharing in the organisations.

## **6.4 Universities Support for Knowledge Creation**

With regard to university support for knowledge creation the respondents were required to indicate how the universities supported knowledge sharing. The knowledge sharing model asserts that management support enhances knowledge creation. Such support could include incentives and rewards (Bulan & Sensuse, 2012; Lin, 2007).

### **6.4.1 Knowledge Creation and Sharing**

The results indicated that universities were involved in knowledge creation and sharing as revealed by 244 (93.8%) academics and 18 (100%) deans of faculties (see results presented in figure 12 and table 21 respectively). According to Nonaka and Ichijo (2007) major goals of the organisations are the creation and use of knowledge.

The deans of faculties indicated that the universities promoted mentorship programmes, where senior and junior academics worked together in research and publication. This was aimed at grooming junior academic staff to get experience and competence in knowledge generation. The findings from the questionnaire and interview also revealed that majority of respondents indicated that the universities supported knowledge creation and sharing among academics.

The knowledge sharing model asserts that top management has the responsibility to support knowledge creation and sharing. Singh and Kant (2008) pointed out that top management within institutions are responsible for supporting the activities of knowledge creation and sharing. Tyagi *et al.* (2015) suggests that it is fundamental for the universities to support the creation of new knowledge to boost the organisation's competitive edge. Fullwood, Rowley and Delbridge (2013) noted that the universities should improve the ways in which knowledge is created, shared and disseminated to improve competency and efficiency. Mitchell and Boyle (2010) emphasise that the university that has the ability to generate knowledge frequently has the advantage of developing unique capability and innovation.

On the other hand 13 (5%) of respondents did not think their universities were involved in knowledge creation and sharing, and 3 (1.2%) did not know whether universities were involved in knowledge creation or not. Dewah and Mutula (2016) revealed that limited commitment and support from top management, lack of incentives and rewards, hindered knowledge sharing in the public sector organisations.

#### **6.4.2 Staff Responsible for Knowledge Sharing**

Responses from the academics 159 (60.9 %) indicated that there were designated staff for promoting knowledge sharing, 77 (29.5%) academics and deans of faculties 18 (100%) indicated that no designated staff, the director of research and publication and librarians were responsible for promoting knowledge sharing in the universities. Figure 12 presents the academics results. These findings are supported by the study of Jain, Sandhu and Sidhu (2007) which found that (63.7%) respondents agreed that knowledge sharing can be promoted if there is a designated knowledge officer in the university, to oversee all activities related to knowledge management.

The findings therefore suggest that universities were using staff that had other responsibilities like the librarian and director of research and publications to promote knowledge sharing. The universities did not have staff employed specifically to oversee knowledge management portfolio. The employees who have their core roles cannot therefore effectively, promote knowledge sharing as an extra responsibility. Jain, Sandhu and Sidhu (2007) noted that there must be designated staff to promote knowledge sharing.

Regarding management of knowledge created in the universities 25, (83.3%) of the librarians indicated that they managed knowledge they received, organized and made it available for use. They noted that both ICT and manual ways were used to manage knowledge. Through the use of ICT university libraries created and managed institutional repositories to store, use and share knowledge. The university repositories stored knowledge in the form of electronic resources such as books, journals, articles, and more.

The knowledge stored in repositories available not only to the respective universities but also to the global community. Mapulanga (2013) in a study conducted to explore the challenges and prospects of digitizing library resources and building digital repositories in the University of Malawi Libraries found that digital repositories were used to store and disseminate knowledge such as theses and dissertations, journals, technical reports, conference papers, local newspapers, magazines, working papers and rare books on Malawi. Ezema (2013) in a study to examine the management of local content materials for open access institutional

repositories in Nigerian university libraries found that the institutional repositories were used mainly to publish and disseminate theses and dissertations, journals, conference proceedings, inaugural lectures, conference/seminar papers, institutional newsletters, lecture notes, students' term papers, examination question papers, students' industrial attachment reports and more.

The librarians in the current study indicated that the management of knowledge especially in digital format was problematic because the ICT systems were not stable exacerbated by the unreliable electricity supply and internet connectivity. Unreliable electricity and internet connectivity is generally a major problem in African countries, including Tanzania. This is made worse by high cost of electricity and internet connectivity. Mapulanga (2013) found in a study that the implementation and use of digital repositories in the University of Malawi were affected by the problem of power, incompatibility of software platforms and limited bandwidth, viral attack on the systems, lack of ICT skills and financial constraints. The findings compare with those of Ezema (2013) who found that the publishing in IR in Nigerian universities was hampered by poor ICT infrastructure lack of education and awareness of publishing on IR irregular power supply , poor funding from the universities , low internet bandwidth and reluctance of academics to publish in IR.

#### **6.4.3 Knowledge Management and Sharing Policies**

Regarding knowledge sharing policies in the universities 94 (36.2%) academics indicated that the universities had knowledge management and sharing policy while 76 (29.2%) of academics and 18 (100%) deans of faculties indicated that the universities had no knowledge management and sharing policy. The results for academics presented in chapter five, figure 13. The knowledge sharing model (Bulan & Sensuse, 2012) asserts that the policies are important in guiding knowledge sharing in the organisation. The responses from the deans who are in the managerial position confirm that the knowledge sharing policies do not exist in the universities. Instead the universities used research and publication policies to promote sharing knowledge among academics. Muchaonyerwa (2015) in similar study on knowledge sharing strategies in universities in KwaZulu-Natal province found that universities had no knowledge management policies and therefore knowledge sharing did not take place effectively. Abbas (2015) in the context of Nigeria found that the institutes lacked knowledge

management policy that was a drawback to knowledge management activities in the organisations. Lack of knowledge sharing policies in the university creates uncertainty in the generation, use and sharing of knowledge. Suppiah and Sandhu (2011) underscore the importance of knowledge sharing policies to facilitate knowledge exchange among academics in the universities. CENN (2011) similarly suggests that the purpose of knowledge management policy is to facilitate acquisition, storage, organisation, control and development of knowledge assets to accomplish organisational objectives. IBERDROLA (2015) also shares similar view that the purpose of knowledge management policy is the acquisition, dissemination and sharing of existing knowledge in the universities to enhance operational efficiency in the use of intellectual capital.

Moreover, to promote knowledge management and sharing, the universities need to integrate knowledge sharing within their strategic plan and operations. The findings on the whole suggest that the academics in the universities studied were practicing knowledge sharing, though this was being hampered by lack of effective knowledge management policies.

#### **6.4.4 Incentives and Rewards**

The findings showed that 130 (49.8%) academics and 18 (100%) deans of faculties indicated that the universities provided incentives and rewards to promote knowledge sharing among academics. On the other hand 131 (50.2%) more than 50% were of the view that the universities did not provide incentives or rewards, to promote knowledge sharing. The other respondents did not know whether the universities provided incentives or rewards to promote knowledge sharing. The results presented in chapter five, table 17. The model of knowledge sharing advocates for incentives and rewards to promote knowledge sharing (Hall, 2001a; Kugel & Schostek, 2004).

The types of incentives or rewards provided by the universities included among others promotion, monetary rewards, research appreciation and training as presented in chapter five, figure 14. The findings are in line with the study of Sandhu, Jain and Ahmad (2011) which demonstrated that lack of rewards and recognition system in public sector did not enhance knowledge sharing. Cheng, Ho and Lau (2009) applied Knowledge Sharing Model in their studies on knowledge sharing among academics in Malaysia and found that incentives were

key factors driving academics to engage in knowledge sharing activities. Kim and Ju (2008) confirm that in South Korea universities rewards system encourage academics to share their knowledge. In this regard, faculty members value rewards such as course reductions, more time and financial support for research, seminars and other financial incentives. Boer, Berends and Van Baalen (2011) similarly noted that effective knowledge sharing takes place when incentive system is appropriate and sufficient to the individuals, to motivate them to create and share knowledge. Kugel and Schostek (2004) found monetary rewards seemed to have an immediate effect on motivation to knowledge sharing. Therefore, the universities should provide academics with incentives to enable them share their knowledge (Boateng & Agyemang, 2016).

Tan and Ramayah (2014) oppose that rewards are key determinants of knowledge-sharing intentions among academics. They posit that academics can share knowledge without demanding for rewards and incentives because this is part of their responsibility as scholars. Another study by Muller (2012) found that academics do not need rewards/incentives to engage in knowledge sharing. Al-Alawi, Al-Marzooqi, and Mohammed (2007) found that knowledge sharing is not influenced by rewards or incentives.

To maintain knowledge sharing in the institutions, the universities need to develop systems that can recognize and reward the efforts of academics for creation and sharing knowledge,

The results indicated that the universities were providing promotions, monetary rewards, appreciation and training to academic staff to encourage them to share knowledge. The cross tabulation computation of incentives and rewards on one hand and knowledge creation and sharing on the other revealed that there was a statistically highly significant relationship between the incentives/rewards and knowledge creation and sharing as depicted in table 17 and 18 in chapter five.

On the budget, the findings revealed that 18 (100%) of deans of faculties noted that the university budget to facilitate knowledge sharing was inadequate. However, the respondents were not ready to reveal the budget allocated by their universities every year for knowledge sharing by the universities. Inadequate funding impedes knowledge sharing practices because incentives such as monetary rewards may not be implemented in part or even in whole. The academics generally noted indicated that there were no incentives/rewards provided by the universities to promote knowledge sharing.



## **6. 5 Knowledge Sharing Strategies in the Universities**

Knowledge sharing strategies are important in facilitating knowledge sharing. The knowledge sharing model advocates for a conducive environment in the organisation to facilitate knowledge sharing (Connelly & Kelloway, 2003; Lin, 2006). The conducive environment for knowledge sharing can be created when knowledge sharing strategies, collaborative partnerships with other institutions, facilities and information systems for knowledge sharing are available.

The results of the study indicated that the universities have different strategies to facilitate knowledge sharing. The strategies include research and publications, electronic infrastructure, Radio and TV, journals published by individual universities (presented in chapter five table 19), subscription to the international journals and Open Performance Review and Appraisals (OPRAS). Muchaonyerwa (2015) found that technology, mentorship and linking knowledge sharing with performance appraisal were key knowledge sharing strategies in the universities in KwaZulu-Natal province of South Africa. Sandhu, Jain and Ahamad (2011) in the context of public sector in Malaysia found that knowledge sharing strategies existed in most organisations. Increasingly most modern universities are encouraging academics to conduct research and share findings with others, rather than hoarding their knowledge (Kraabel & Mueller, 2009).

The findings showed that universities invested in electronic infrastructure and the use of modern technology to facilitate knowledge sharing nationally and globally. The use of electronic infrastructure such as social media was helpful in facilitating knowledge storage, access, distribution and sharing. Sohail and Daud (2009) found that academics could increase knowledge sharing practices if the universities' information technology infrastructure was improved. Abbas (2015) in a study of knowledge management strategies and practices in Nigeria agricultural research institutes, established that technology, cross-functional project teams and mentoring were used for promoting knowledge sharing. Siemens medical solutions strategy known as KnowledgeShare@MED was global initiative generating, capturing, disseminating and sharing knowledge relevant organisations missions (Muller, 2003).

Likewise, the study by Jain, Sandhu and Sidhu (2007) advocated for top management support to cultivate the culture of knowledge sharing in the organisation, they also underlined the role

of technology, research and publications, use of newsletters and websites, the position of knowledge sharing officer in the organisation, performance appraisal and rewards, and non-monetary rewards as strategies that can be used to encourage knowledge sharing.

Radio and television were also used for knowledge sharing among academics. They were also used to report research findings to the community. The academics in addition used radio and TV to discuss their research findings.

The universities used internally generated journals to publish and disseminate their research and share with peers locally and internationally. The publication of research findings in internally generated journals strategy helped senior academics to work together with junior academic and mentor them and also build confidence and writing skills as depicted in table 19 in chapter five. Despite the use of internally generated journals to publish and share research findings of academics, such journals did not attract quality and critical mass of journals thus delaying publications. The internally generated journals in addition lacked adequate funding to sustain their continued publications or they are published irregularly that limit academics knowledge sharing through their internal journals.

The findings revealed that the universities used Open Performance Review and Appraisals (OPRAS), as a strategy to push academics to participate in knowledge sharing. For example, the Tanzania Commission for the universities (TCU) used OPRAS as a mandatory strategy in all universities since 2012 to enhance knowledge sharing among academics. Through OPRAS academics are required to complete OPRAS forms yearly indicating the number of research they have conducted as well as the number of books, chapters and articles published in a given year.

Ling, Sandhu and Jain (2009) found that in the American multinational company based in Malaysia used OPRAS to promote creation and sharing of knowledge in the universities though it decried limited funding leading to failure by academics to conduct research and publish them and thus affecting promotion on account of limited research and publications.

The OPRAS strategy was also used by the Multimedia University in Malaysia where it was compulsory for academic staff to contribute their research work to ShareNet a knowledge sharing electronic space (Cheng *et al.*, 2009). Through OPRAS strategy, the universities identified and selected those academics that performed well in a specific performance and

promoted them to senior levels. However, the rewards for achieving targets require good tools to appraise staff performance. Critics of OPRAS system as strategy for promoting knowledge sharing among academics argue that academics freely conduct research and generate knowledge without undue pressure. Kasser and Miles (2002) challenged the OPRAS strategy for enhancing knowledge sharing saying organisation regulations and policies should be followed instead.

The use OPRAS nevertheless has been widely used in the public sector to link sharing of knowledge with performance appraisals of the staff (Sandhu *et al.*, 2011). Lerro and Schiuma (2013) support OPRAS knowledge sharing strategy asserting that it is no longer an option in the universities as it enables them to create and share knowledge within and outside thus building competence in generating knowledge. The knowledge sharing model asserts that organisational knowledge sharing depends greatly on the strategy an organisation pursues for competitive advantage (Hsu, 2008). Good strategies of knowledge sharing lead to competitiveness of the universities. Therefore, Lerro and Schiuma (2013) emphasise that knowledge sharing strategies are no longer an option in the universities but should be part and parcel of vision and mission.

#### **6.5.1 Satisfaction of Academics with Knowledge Sharing Strategies**

Regarding the satisfaction of academics with knowledge sharing strategies being used in the universities, the majority academics were either satisfied or very satisfied 150 (57.9%). Those who were not satisfied with strategies that were available in their universities for knowledge sharing were also a significant number as reflected by the results in chapter five figure 15. This suggests that the universities still needed to improve knowledge sharing strategies among academics.

#### **6.5.2 Collaborations with Other Institutions**

Regarding collaborations, the findings revealed 76 (29.1%) of the academic staff and deans of faculties were of the view that universities had collaborative projects within and outside of the country. Among the areas which they collaborated were, research, publications, training, access to COTUL electronic resources containing books, journals and other scholarly work on climatic change. The importance of collaboration in research among academics cannot be over emphasised as it provides the opportunity to establish international links and

partnerships for purposes of knowledge sharing and exchange. Collaboration strategy of knowledge sharing minimises cost of knowledge generation and use sharing among collaborating partners. It also enhances knowledge flow from both sides. The study of Sita, Kumaraswamy and Chitale (2012) revealed that collaborative knowledge sharing links the learning to the knowledge processes and therefore enhances university learning and teaching. It helps build the name and reputation of the individual universities. Rathi, Given and Forcier (2014) in a related study also found that in knowledge sharing collaboration increases participants' experiences.

The findings revealed that Information Technology (IT) systems also facilitated collaborative partnerships among universities and helped them achieve their strategic goals (Kim & Lee, 2006). Electronic resources and communications among the universities bridge the distance thus, making partners to share and exchange knowledge quickly and effectively. The United Republic of Tanzania (2010) national research policy supports collaborative engagement among universities to maximise the use of research results and increase knowledge sharing. The policy further indicates collaborations and interactions lead to knowledge and technology transfer and sharing.

The librarians who were participants in this study noted that the Consortium of Tanzania Universities and Research Libraries (COTUL) which is responsible for providing e-resources (books and journals), research training, and local journals published by the universities contributed immensely to knowledge sharing among academics. COTUL was established to enable universities and research libraries to access electronic resources from the Consortium. The findings showed that COTUL was making a significant contribution towards knowledge sharing in Tanzanian universities through electronic resources. South African National Library and Information Consortium (SANLiC, 2015), Kenya Library and Information Services Consortium (KLISC, 2014), Consortium of Uganda University libraries (CUUL, 2016) and *Universiteitsbibliotheek & koninklijke Bibliotheek* (UKB, 2014) in Netherlands, all have established electronic resources initiative as ways of promoting knowledge sharing among partners to support core business of learning, teaching, research and consultancy. Collaborations through consortia provide wide access to electronic resources by generating knowledge that is subsequently shared to improve academic performance.

### **6.5.3 Facilities for Knowledge Sharing in the Universities**

Regarding the facilities available for knowledge sharing in the universities, 18 (100%) deans of faculties and 25 (83.3%) of the librarians noted that the universities have various facilities which enabled knowledge sharing among academics. These facilities include ICT infrastructure, internet, libraries, Online Public Access Catalog (OPAC) institutional repositories and WEB 2.0. The role of institutional repositories in facilitating knowledge sharing is underscored by Nassuora and Hassan (2010) who assert that the creation and maintenance of knowledge repositories in the universities has immensely improved knowledge access and preservation.

The majority 25 (83.3%) of the librarians also observed that universities subscribed and accessed databases with full text journal articles such as; Cambridge Journals Online, Emerald insights, JSTOR, OECD library, OUP Journals, Sage Online Journals, Taylor & Francis, University of Chicago Journals, and Wiley Online Library to promote knowledge uptake, sharing and exchange. Access to journals is of vital importance in facilitating vibrant research and scholarly engagement. Full text journals also support teaching, and consultancies. The majority of deans and librarians therefore believed that the universities had requisite facilities to enhance knowledge sharing among academics within and outside the universities.

They however, pointed out that for these facilities to be effectively used they need to be properly maintained especially with regard to reliable internet connection, and well equipped libraries. They also cited the need for skills and expertise operates electronic systems. They also expressed the need for adequate budget to facilitate knowledge sharing. Usman and Oyefolahan (2014) in a study of Web 2.0 found that knowledge sharing can be enhanced using IT systems, electronic repositories, internet accessibility, materials availability (online material, video, class content online), video conferencing, computer labs and online forum to facilitate discussion. The respondents were concerned with poor internet connection, low bandwidth and electricity supply in the universities which impeded knowledge sharing among academics in the universities. The internet in the universities is not consistent due to problems of electricity and bandwidth as well.

#### **6.5.4 Information Systems for Supporting Knowledge Sharing in the Universities**

The findings indicated that the universities have information systems for knowledge sharing. This was confirmed by the 214 (83.6%) respondents who agree that there were systems in the universities. In contrast, 31 (12.1%) noted that there were no systems for knowledge sharing, others 11 (4.3%) did not know as shown by results presented in chapter five table 20. Connelly and Kelloway (2003) pointed out that information systems facilitate knowledge sharing by providing common platform for storing and sharing such knowledge. Information technology that include information systems facilitates knowledge sharing by linking information communication infrastructure such as data processing, storage and communications systems (Becerra-Fernandes & Sabherwal, 2010).

The findings presented in Table 20 from individual universities surveyed indicated that universities, SAUT 28, (84 %), SUA 112, (80.6%), MU 56, (96.6%) and UoI 18, (69.2%) respectively had information systems. These results suggest that the universities management were cognizant of the importance of knowledge sharing among academics despite the fact that they did not allocate adequate resources to the same. Al-Alawi, Al-Marzooqi and Mohammed (2007) emphasised the need for universities to provide information system to facilitate knowledge sharing among academic staff. Anantatmula (2007) in a study to investigate knowledge sharing among students in university environment, also found that information systems such as databases and decision support systems played an important role in facilitating knowledge sharing. Petrides (2004) asserts that higher learning institutions the world over spent millions of dollars to provide information systems to increase the efficiency operations to improve decision making and knowledge sharing.

The findings confirm the important role played by information systems in improving the competence of the universities management processes and in facilitating knowledge generation, codification, storage, and transfer.

#### **6.6 Leveraging Knowledge Assets in Teaching, Research and Consultancy**

The findings revealed that academics were leveraging knowledge asset in their core functions of teaching, research and consultancy purposes. The results revealed that academics leveraged knowledge asset in their teaching, research and consultancy, with a majority 133

(50.9%) integrating knowledge into their teaching, research and consultancy to improve their quality of services; 68 (26 %) using knowledge to support curriculum development. Kim and Ju (2008) in a related study found that academics used knowledge they generated and shared for teaching and research purposes. Fink and Gururajan (2010) found that academics in Australian universities leveraged knowledge asset in teaching and doing research as their core functions.

The findings showed that the academics generated both explicit and tacit knowledge. The explicit knowledge generated was in the form of research reports, journal articles, and books. Abbas (2015) similarly established that the Nigerian agricultural research institutes generated both explicit knowledge and tacit knowledge that was shared within and outside the organisations. The knowledge generated was used for teaching, research and consultancy. The tacit knowledge generated and shared related to work experiences and was shared through daily interactions, personal contacts, and discussions with colleagues.

With regards to the type of knowledge generated and shared, the majority of the academic staff 154 (59%) shared explicit knowledge while 2 (0.8%) shared tacit knowledge only and another 105 (40%) shared both tacit and explicit knowledge as presented in chapter five figure 16. The dominance of explicit knowledge sharing among academics could be attributed to the fact that it is documented and therefore easy to access and share compared to tacit knowledge which resides in the individuals heads. Besides, the facilities provided for knowledge sharing by the universities were more amenable to explicit knowledge sharing than explicit knowledge sharing. The study by Fullwood, Rowley and Delbridge (2013) found that generally within university environments, academics shared all types of knowledge though explicit knowledge tended to be shared by majority of academics (59%) compared to about (40%) who shared tacit knowledge. The academics used the knowledge shared to generate new knowledge which they used for academic staff performance and development.

With regard to teaching, the findings clearly showed that 233 (89.3%) respondents leveraged knowledge for teaching purposes either often or most often, 28 (10.7%) leveraged knowledge either occasionally or rarely as presented in chapter five figure 17. The finding showed that majority of the respondents leveraged their knowledge for teaching purposes compared with those who leveraged knowledge for teaching occasionally or rarely. The results concur with

the findings of the study of Fullwood, Rowley and Delbridge (2013) which found that (57.4%) of respondents often or always shared knowledge for teaching and learning purposes. The results suggest that most of the academics share knowledge for teaching purposes because this is a task they perform daily or more frequently.

Cross tabulation was computed to determine how education qualification influenced the sharing of knowledge among academics for teaching purposes. The results indicated that bachelors degree holders 9 (3.4%), master's degree holders 126 (48.3 %) and PhD degree holders 98 (37.5%) all shared knowledge for teaching purposes. The findings indicated that knowledge sharing was largely similar across the different qualifications. The results presented in chapter five, table 21.

With regard to the research, the findings revealed that 179 (68.6%) either often or most often leveraged knowledge for research purposes as presented in chapter five figure 18 and table 22 respectively. The response on this item may be explained by the fact that research is one of the core businesses of academics in the universities. Fullwood, Rowley and Delbridge (2013) found that (59.5%) of academics often or always shared knowledge on research information and activities. Similarly, Martin and Marion (2005) assert that the university is a centre for innovation, research and consultancy where new ideas and knowledge are generated. Kim and Ju (2008) found that lack of competent academics, lack of facilities or lack of motivation could hinder academics to leverage knowledge for research purposes. This could also affect national and global academic ranking of Universities and their international recognition.

The findings revealed with regard to the level of education that majority of PhD degree holders 87 (80.5%) conducted research, compared to master's degree holders 87 (61.7%) and bachelor degree holders 5 (41.7%) respectively (See table 22 in chapter 5). By and large PhD degree holders are expected to be actively involved in research compared to those with lower qualifications in the universities. The results further indicated that bachelor degree holders were the least involved in research. This is to be expected as advanced researchers usually tend to be the proactive scholars with either PhDs or Masters degrees in the universities.

Regarding leveraging knowledge for consultancy purposes, the findings revealed 97 (47.2%) academics agreed that they shared knowledge for consultancy purposes either often or most often. However, 102 (39.1%) shared knowledge occasionally and 48 (18.4%) shared



knowledge rarely for consultancy purposes. On the other hand (13, 5%) said they did not share knowledge at all for consultancy purposes. The results were presented in chapter five figure 19 and table 23 respectively. Overall, the findings revealed that there were a few academics that actively leveraged and shared knowledge for consultancy purposes. Majority of respondents either shared knowledge occasionally or rarely which implies that academics were not actively leveraging knowledge for consultancy purposes.

The results imply that the universities were not utilizing the knowledge generated and shared for consultancy purposes. This result may be attributed to limited expertise or reluctance on the part of academics in this area. The universities should encourage the academics to leverage knowledge for consultancies in order for them to enhance their competitive advantage. In study on knowledge sharing among Malaysian academics, Goh and Sandhu (2013) found that few academics were involved in consultancy and recommended that universities' management needed to encourage teamwork in consultancy work to create mass of expertise in this area. Katambara (2014) in the context of one university in Tanzania found limited consultancy activities by academics at the university with only 23.3% of academics being involved against the majority of 76.3% who were not involved.

Cross tabulation was computed in this, to determine how often the academics with different education level shared knowledge for consultancy purposes. The results indicated that bachelor's degree holders, 3 (25%), master's degree holders 46 (32.6 %) and PhD degree holders 48 (44.5%) leverage knowledge for consultancy purposes as revealed by results presented in table 23, which shows low levels of participation on consultancy purposes.

All the deans of faculties 18 (100%) indicated that their universities encouraged and supported research, consultancy and publications. The findings confirm that the universities put premium on teaching, research, and consultancy despite the fact that the latter does not seem to feature a lot in the academics' activities. The results seem to suggest that the university management did not put a lot of emphasis on consultancy in the academics' core mandate. Boyd and Smith (2016) suggest that academic staff in higher learning institutions need to equally focus on consultancy as they do to teaching and research. Consultancy would help contribute to improve skills, competencies and expertise for knowledge sharing.

## 6.7 Attitude of Academics Towards Sharing Knowledge

The knowledge sharing model asserts that positive attitude contributes towards an individual's willingness to share knowledge (Bulan & Sensuse, 2012; Fink & Gururajan, 2010; Noor & Salim, 2012; Yang, 2008). The findings generally revealed that 255 (97.7%) of academics had a positive stance towards knowledge sharing as reflected in the results presented in figure 20. The results concur with those of Goh and Sandhu (2013) who found that academics were most likely to share knowledge with their colleagues in universities. This result perhaps suggests that the academics understand and attach great importance to knowledge sharing. A study on knowledge sharing amongst academics in United Kingdom's (UK) Universities by Fullwood, Rowley and Delbridge (2013) found that respondents had positive attitude towards knowledge sharing and also agreed that sharing knowledge is an important experience. Similarly, Sandhu, Jain and Ahamad (2011) found that positive attitude is the most important factor for academics to participate in knowledge sharing. The positive attitude towards knowledge sharing shown by academics in the current study creates an enabling environment for knowledge production and sharing rather than knowledge hoarding.

The librarians also were of the view that the attitudes of academics towards knowledge sharing were positive. Several studies such as Kim and Lee (2006); Bock *et al.* (2005); Goh and Sandhu (2013) have found that individual's positive attitude is important predictor of knowledge sharing. Sohail and Daud (2009) pointed that employees' attitudes towards knowledge sharing are clearly linked to organisational commitment, thus universities should commit fully to facilitating knowledge sharing. The importance of positive attitude towards knowledge sharing is underscored by the knowledge sharing model.

The views of all deans of faculties revealed that academics were willing to share knowledge. The same finding was reached by Jain, Sandhu and Sindhu (2007) who in a related study also found that academic staff in general were willing to share knowledge with their colleagues. Mueller (2012) on cultural antecedents of knowledge sharing in project team found that the willingness to share knowledge is commonly determined by trust, personal responsibility, motivation and output orientation. Cavaliere and Lombardi (2015) found that top management support influenced employees' willingness to participate in knowledge sharing. Massingham (2016) on the other hand found that mentor factor helps groom others to share their knowledge and experiences. Despite a general willingness among academics to

share knowledge, there was a minority of respondents who were not willing to share their knowledge though they were ready to receive knowledge from others as reflected in the results presented in chapter five in figure 21.

Hsu and Chang, (2014) found that one of the reasons which cause unwillingness to share is lack of trust among academics. Similarly, Islam, Jasimmudin and Hassan (2015) found that individuals who are unwilling to share knowledge with others believe their acquired knowledge is valuable and necessary for their personal development including career progression and job security. Those academics who do not want to share knowledge have a feeling that they may lose their competitive advantage.

On the question of whom they shared knowledge with, the findings revealed that majority of the academics shared knowledge with fellow academics in their universities 259 (99.2%) followed by sharing of knowledge with students 255 (97.7%) and sharing knowledge with peers from other universities 162 (62.1%). A few respondents shared knowledge with researchers and other people in the community 37 (14.2%) as reflected in the results presented in chapter five in figure 22. The respondents mostly used the radio to share knowledge with the community, though the radio coverage was limited to a certain area. Also they used outreach programmes to share knowledge especially with farmers.

The results generally indicate that there was knowledge sharing within and outside the universities. The findings suggest that academics shared knowledge more with their colleagues in their respective universities compared to knowledge sharing with academics in other universities perhaps due to distance, or trust. Trust is likely to be developed with people they often interact with most of the time through meetings, conferences and seminars. Sandhu, Jain and Ahamad (2011) noted that knowledge sharing among employees in public sector was work related.

The findings revealed that academics shared knowledge with academics outside their universities which suggests that collaboration among academics of different universities is happening.

### **6.7.1 Level of Awareness of Academics About Knowledge Sharing**

On the level of awareness, respondents were asked to rate their awareness on knowledge management, and knowledge sharing. The findings indicated the less than 50% academics were aware of the concept of knowledge management to a great extent or to very great extent 121 (46.3%), 98 (37.5%) to a moderate extent, 39 (15%) to a small extent and 3 (1.1%) did not have any awareness about knowledge management. As reflected in the results presented in chapter five, in table 24. The results suggest the need for universities to raise awareness of academics about knowledge management.

With regard to the concept of knowledge sharing, the findings indicated that majority (186, 71.4%) of academics were aware of knowledge sharing either to great extent or to very great extent 63 (24.1%); to a moderate extent, 9 (3.4%) to a small extent and 3 (1.1%) were not aware of the concept of knowledge sharing. Generally, the results suggest that more academics are aware of knowledge sharing concept. The result concurs with earlier findings which showed that academics had positive towards knowledge sharing.

The knowledge sharing model advocate for creating awareness about the importance of knowledge sharing to enhance the knowledge sharing practice (Bulan & Sensuse, 2012).

### **6.7.2 Importance of Knowledge Sharing: Academics Perspectives**

On the importance of knowledge sharing as depicted in table 25 chapter five, the results revealed that 203 (77.8%) of academics believed that knowledge sharing improved quality of teaching, research and consultancy. The respondents also believed that knowledge sharing enabled academics to share expertise and add knowledge to what they already know. Furthermore, knowledge sharing promoted learning and reading culture, broadens understanding of the academics and helps in solving social and economic problems in universities by putting in practice the knowledge acquired. Besides, knowledge sharing promotes knowledge production in the universities. The 177 (67.8%) academics indicated that knowledge sharing builds trust among academics and strengthens their cooperation. It also encourages interpersonal relationship and creates networking among academics. Another 67 (64%) of respondents felt that knowledge sharing fosters academic performance by inspiring new knowledge production among academics. Some 119 (45.6%) of the respondents noted that knowledge sharing promotes professional development and builds

academic team work. Another 89 (34.1%) were of the opinion that knowledge sharing facilitates innovation by encouraging free flow of ideas which in turn contributes to the development of the universities.

Moreover, 72 (27.6%) of respondents believed that knowledge sharing encourages scholarly work and motivates young scholars to publish and share their knowledge. In addition, 68 (26.1%) noted that knowledge sharing updates academics with current issues, and uncovers the hidden knowledge. Another 50 (19.4%) of respondents noted that knowledge sharing promotes and increases visibility of the university both locally and internationally through publications and conferences. Furthermore 44 (16.9%) of respondents were of the opinion that knowledge sharing reduces cost of electronic resources. Furthermore, 15 (5.7%) of the respondents were of the opinion that knowledge sharing gives exposure to academics, especially when they publish journal articles, books and research findings as reflected in the results presented in chapter five in table 25.

Generally the findings indicated that the academic staff was aware of the importance of knowledge sharing in their academic life. These findings are comparable to those of Ling *et al.*, (2009) on views towards importance of knowledge sharing in a firm where the results showed that 75% of the respondents had positive views of the importance of knowledge sharing. In context of Ireland, a comparison between knowledge sharing in the public and private sector (McAdam & Reid, 2000) found that in public sector, staff were more positive about the importance of knowledge sharing. Similarly, Al-Athari and Zairi (2001) found that about 50% of academics were positive in their views on importance of knowledge sharing in a Kuwait university. Knowledge sharing was said to promote professional development, innovation and scholarly work. Despite the importance of knowledge sharing other academics still hoarded knowledge with the expectation that it gave them competitive advantage. Israilidis *et al.* (2015) found that individuals' ignorance about the importance of knowledge sharing restricted individuals from participating in knowledge creation, use and sharing.

To support that they know the importance of knowledge sharing, 260 (99.6%) of the academics responded that they share knowledge with others. However, only 1 (0.4%) responded that they did not share knowledge because of limited time, lack of motivation and trust among academics. The findings presented in figure 23 in chapter five

## 6.8 Factors Influencing Knowledge Sharing Among Academics

The findings revealed that factors influence knowledge sharing among academics in Tanzanian universities as presented in figure 24 and table 26 in chapter five was; organisational factors such as management support, rewards, organisational culture, motivation, university policy of knowledge sharing, and incentives. The other factor influencing knowledge sharing is personal expectation, individual attitude, trust and personal interactions. The knowledge sharing model also identifies three major factors that influence knowledge sharing that are organisational, technological and individual (Fullwood, 2014; Ismail & Yosof, 2008; Israilidis *et al.*, 2015; Kwakye & Nor, 2011; Noor & Salim, 2012) as shown in the figure below. The figure 25 shows the relationship between University, academics and technology in promoting knowledge sharing. Each component has its own roles. Universities are concerned with, supervision, policy making, motivation, knowledge creating sharing culture, and creating a favourable environment. Academics are knowledge creators, users and sharers. Technology is used in the processing, storage, retrieval and communication of knowledge.

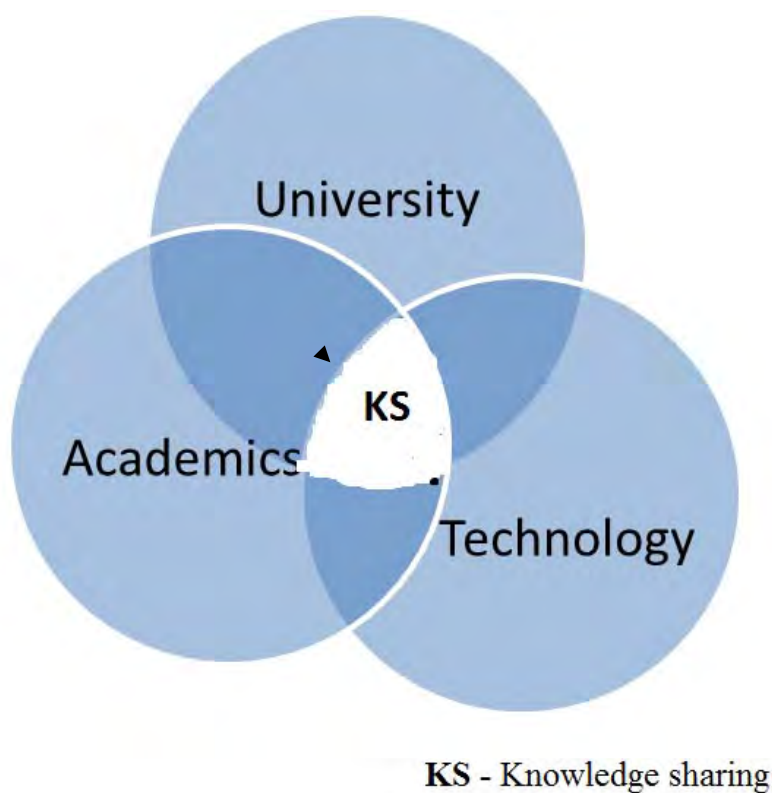


Figure 25: Relationship of University, Academics and Technology in Knowledge Sharing

### **6.8.1 Organisational Factor in Knowledge Sharing**

The findings revealed that majority of the respondents agreed that organisational, technology and individual factors influenced knowledge sharing among academics in universities as reflected by 128 (49%) academics 18 (100%) deans of faculties and librarians 19 (63.3%).

The organisation formulates policy to guide knowledge sharing. The organisation also provides incentives/rewards to motivate academics to participate fully in knowledge creation and sharing. The organisation also oversees all activities related to knowledge sharing and carries out the coordination function as well.

### **6.8.2 Individual Factor in Knowledge Sharing**

The findings revealed that the respondents (deans, academics and librarians) all agreed that, the individual factor was important in knowledge sharing. The individual aspects that affect knowledge sharing include personal expectation, individual attitude and willingness. Knowledge sharing is social activity, thus personal interactions among academics is essential. Mtega, Dulle & Ronald (2013) found that knowledge was generated in part through personal experiences and social interactions and shared through discussions. The other individual aspect that affects knowledge sharing is trust. This must exist between parties prior to knowledge being shared. Lee and Choi (2003) asserted that individuals are the heart of organisational knowledge creation, use and sharing. Similarly, Kwakye and Nor (2011) revealed that the creation and sharing of knowledge depends on the conscious effort of an individual who has to set the ball rolling for knowledge to be shared.

### **6.8.3 Technology Factor in Knowledge Sharing**

Majority of the respondents also agreed that information technology such as information systems, databases, institutional repositories, social networks and other web 2.0 platforms were important in knowledge sharing as adduced by academics 223 (85.3%) deans of faculties 18 (100%) and librarians 26 (86.7%). Information technology is important in facilitating knowledge creation, storage, retrieval and sharing both nationally and internationally. In the same line, Kim and Lee (2006) found that technology, ICT

infrastructure in particular enhance knowledge sharing activities and support organisations to manage their knowledge through repositories. Dewah and Mutula (2016) assert that technology is at the center of knowledge management because it supports, processes, stores and retrieves knowledge embodied in systems. Bulan and Sensuse (2012) asserted that information technology infrastructure facilitates knowledge sharing activities by linking information communication infrastructure such as data processing, storage and communications systems (Becerra-Fernandes & Sabherwal, 2010).

### **6. 9 General Comments by Respondents on Knowledge Sharing Among Academics**

The respondents expressed the view that knowledge sharing should be part of academic life in order to broaden academics' minds in teaching, research and consultancies. The respondents noted that the academic staff should dedicate their academic life to teaching writing and publishing. In doing so they are more often than not prone to use their knowledge to share with others.

The respondents also expressed the need for more funding to enhance research and knowledge production as the funding allocated for research is not sufficient at all. The government should support knowledge management and sharing in universities to increase scholarly works production, and improves education performance. This will contribute to the national development as well.

The respondents were of the view that Knowledge sharing and exchange should be promoted beyond individual universities. They felt universities needed to create conducive environment for knowledge sharing through promotion, rewards/incentives and infrastructure development. The strategy of grooming young academicians into next generation scholars promoted knowledge sharing.

Efforts should be made in the universities to ensure knowledge hoarding is discouraged and academics educated on the importance free flow and sharing of knowledge to create a truly knowledge-based society. Moreover, enabling policies on knowledge sharing should be developed by universities to encourage knowledge sharing among academics.



## **6.10 Summary**

The purpose of this chapter was to discuss and interpret the findings of the study that were presented in chapter five. The interpretation and discussion of the findings was guided by research questions and the literature reviewed.

Generally, the findings in the study showed that majority of the academic staff were master's degree holders 141 (54.1%) followed by 108 (41.3%) who had PhD degrees and 12 (4.6%) who possessed bachelor degrees. Moreover, of the deans of faculties, majority were PhD degree holders 13 (72.2%) followed by 5 (27.8%) master's degree holders. The third category of respondents were librarians, majority who possessed master's degrees 16 (53.3%), bachelor's degree holders 11 (36.7%) and 3 (10%) PhD degree holders.

On organisational culture, majority of the academic staff were of the view that the university promoted knowledge sharing culture. The findings further revealed that universities promoted culture of knowledge through workshops, research, seminars, publications, presentations, meetings, public lectures, forums, conferences, training, and colloquial among others.

The findings revealed that structures of the universities did not have knowledge management and sharing units, the directorate of research and publications was the office mandated in the organisational structure to oversee knowledge sharing. The results showed that the universities supported knowledge creation and that sharing as the major goal of the organisation is the creation and use of knowledge (Nonaka & Ichijo, 2007). The universities used library staff and office of research and publications to facilitate knowledge sharing and exchange among academics. However, the common practice in universities is to have a designated staff or office to facilitate knowledge sharing (Jain, Sandhu, & Sidhu, 2007). The results also revealed that the universities did not have knowledge management and sharing policy but instead relied on research and publications policies.

The results revealed that the universities provided incentives and rewards to promote knowledge sharing. Such incentives involved promotion, monetary rewards, appreciations and training opportunities for the academic staff. However, there was limited budget to finance and sustain knowledge sharing activities.

On knowledge sharing strategies, the respondents indicated that there were strategies used to promote knowledge sharing that included use of journals to share research findings. Other strategies included the use of radio and TV, collaboration, and Open Performance Review and Appraisals OPRAS, and use of Information technology/information systems for knowledge sharing. However, the information technology use for knowledge sharing was hindered by poor internet connection, and unreliable electricity.

As to the type of knowledge that was generated and shared among academics, the results revealed that both explicit and tacit knowledge were generated and shared. However, explicit knowledge was the most common knowledge that was generated and shared; perhaps the systems in place in the universities were more amenable to explicit knowledge. The results further indicated that academics leveraged knowledge for the purposes of teaching, research and consultancy.

The results revealed positive attitude toward knowledge sharing by academics and they generally were willing to share knowledge. Majority of the academics shared knowledge mostly within their universities than with other universities. The academics were also aware of the concepts of knowledge management and knowledge sharing though there were still significant numbers who were not aware of the meaning of these concepts raising the need to raise awareness. Previous studies conducted in Tanzania on knowledge sharing have not engaged knowledge sharing model that this study adopted (Lwoga and Chilimo, 2008; Masele, 2008; Mushi, 2009; Katambara, 2014).

The findings confirmed that organisational, individual and technology were key factors influencing knowledge sharing among academics.

## **CHAPTER SEVEN**

### **SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATIONS**

#### **7.1 Introduction**

This chapter presents the summary, conclusions and recommendations of the study based on the interpretations and discussion provided in chapter six. The conclusion in a PhD thesis summarizes the findings, discusses implications, and points to possibilities for further research (Marvasti, 2004:145). Dawson (2009:139) is also of the view that the conclusion in a PhD thesis summarises findings and draws conclusions from them, possibly in relation to other research or literature.

The purpose of the study was to investigate the status of knowledge sharing in universities in Tanzania. The study sought to address the following research questions:

1. How does organisational culture promote or hinder knowledge sharing among academics in the universities?
2. To what extent do universities in Tanzania support knowledge creation and sharing among academics?
3. What knowledge sharing strategies exist in the universities?
4. How are the academics leveraging knowledge assets in their core functions of teaching, research and consultancy?
5. What are the attitudes of academics towards knowledge sharing?
6. What factors influence knowledge sharing among academics in Tanzanian universities?

The study was guided by the knowledge sharing model of Cheng, Ho and Lau, (2009). The study adopted a post positivist paradigm to understand multiple participants' meaning, attitudes and to measure variables and generalise findings on the status of knowledge sharing among academics in selected universities in Tanzania. The study employed a mixed method to obtain comprehensive evidence for investigating the research problem. Mixed method is useful as the weaknesses that can be encountered by using either quantitative or qualitative method singly in a study can be offset (Creswell & Garrett, 2008). The study was conducted in four Tanzanian universities namely: St Augustine University of Tanzania, Sokoine

University of Agriculture, Mzumbe University and University of Iringa respectively. Within each university, the survey design was used and 261 respondents (academics) out of a sample of 291 targeted were reached. In addition, 18 deans of faculties from a target of 20 were interviewed. Furthermore, 30 librarians from target of 41 were reached and interviewed. Quantitative data collected through questionnaires was analyzed using the Statistical Package for the Social Sciences (SPSS) while qualitative data was analyzed thematically.

This chapter also presents a summary of the findings and conclusions organised according to the research questions. This chapter also provides recommendations on how to address the emerging problems in knowledge sharing in the universities. Further areas of research are provided.

## **7.2 Summary of Findings**

This section provides a summary of the findings. The summary of the findings is presented in the order of the research questions with biographical data being presented first.

### **7.2.1 Biographic Characteristics of the Respondents**

The respondents were required to provide biographical information including their university of affiliation and level of education. The results showed that the majority of the academics possessed masters degrees 141 (54.1%), followed by PhD 108 (41.3%) and Bachelor degrees 12 (4.6%). The findings revealed the distribution of qualification in the four universities studied as follows: SAUT- Bachelor degree holders (0, 0%), masters degree holders 19 (7.3%), and PhD degree holders 16 (6%); SUA- Bachelor degree holders 7 (2.7%), masters degree holders 68 (26.1%), and PhD degree holders 66 (25.3%); MU- Bachelor degree holders 5 (1.9%), masters degree holders 34 (13%), and PhD degree holders 19 (7.3%); UoI Bachelor degree holders 0 (0%), masters degree holders 20 (7.7%), and PhD degree holders 7 (2.7%).

The findings revealed that the majority of the academic staff in the universities were master's degree holders. In all the universities studied, university academic staff must be holders of at least masters or PhD degree qualifications to qualify to teach. The findings showed that holders of PhDs were far fewer than those with masters' degrees.

The study also sought to find out the highest academic qualification of the deans of faculties. The results findings revealed that the deans of faculties in the four universities possessed either a master's degree or a PhD. The majority of the deans 13 (72.2%) possessed PhD degrees. Only 5 or 27.8% of the deans of faculties possessed a master's degree.

With regard to the Librarians, the findings indicated that 11 (36.7%) were bachelor's degree holders, 16 (53.3%) were master's degree holders and 3 (10%) were PhD degree holders. The findings further revealed that the majority of the librarians who were interviewed possessed master's degrees. The findings conform to the requirement in the universities that a librarian must be in possession of at least a bachelor's degree in librarianship.

### **7.2.2 University Organisational Culture**

The first research question of the study sought to establish how the organisational culture promoted or hindered knowledge sharing among academics. The knowledge sharing models consider organisational culture as enabler for the creation, transfer and sharing of knowledge (Lin, 2007; Riege, 2005). The majority of the academic staff 224 (86.1%), deans 18 (100%) and librarians 19 (63.3%) were of the view that the university culture promoted knowledge sharing compared to 35 (13.5%) of respondents who felt that the university culture did not promote knowledge sharing and 1 (0.4%) did not know whether the university culture promoted or hindered knowledge sharing. Similar studies conducted in Malaysia by Sandhu, Jain and Ahmad (2011) supported the view that existing organisation culture in departments supported knowledge sharing (44.2%) compared to (27.1%) who did not support this view, while (28.8%) were not sure.

Based on levels of education 9 (75%) of bachelor degree holders 122 (86.5%) master's degree holders and 93 (86.9%) PhD degree holders agreed that university culture promoted knowledge sharing. The findings revealed that the universities promoted a culture of knowledge sharing through workshops, research, seminars, publications, presentations, meetings, public lectures, forums, conferences, training, and colloquia.

The respondents, who did not agree that their university culture promoted knowledge sharing, said that the university focused more on teaching which is the core business. Others claimed

that it is because of financial limitations and lack of adequate support. Overall the findings revealed that the university cultures promoted knowledge sharing. The findings revealed generally that academics were enabled to share knowledge by the Directorate of Research and Publications.

### **7.2.3 Universities Support for Knowledge Creation**

The second research question investigated the extent to which universities supported knowledge creation and sharing among academics. The knowledge sharing model affirms that the management support factor is central to encouraging knowledge creation and sharing. The majority of the respondents 244, (93.8%) of academics and 18 (100%) of deans of faculties indicated that universities supported knowledge creation and sharing compared to 34 (13.1%) academics who disagreed and 3 (1.2%) did not know whether their universities creation and sharing of knowledge or not. Nonaka and Ichijo (2007) assert that a major goal of any organisation is the creation and use of knowledge. It is revealed from the 159 (60.9 %) of academics and 18 (100%) deans of faculties that the universities used library staff and directorates of research and publications to promote knowledge creation and sharing activities. In contrast, a minority disagreed of respondents 77 (29.5%) were of the view that their universities did not promote knowledge creation and sharing while 25 (9.6%) did not know whether their universities promoted knowledge creation or sharing. Jain, Sandhu and Sidhu (2007) supported the need for the university to have designated staff to promote creation and knowledge sharing.

The findings also revealed that none of the universities have a knowledge management and sharing policy, they were guided instead by research and publications policy as reported by 166 (63.8%) academics and 18 (100%) deans of faculties. Regarding incentives and rewards, 130 (49.8 %) of academics acknowledged that the universities provided incentives and rewards as compared to 131(50.2%) who disagreed. On the other hand, all the deans affirmed that the universities provided incentive and rewards to promote knowledge creation and sharing. The findings showed that the universities provided incentives such as promotions, monetary rewards, appreciation and training to the academic staff to encourage knowledge creation and sharing. However, the deans of faculties revealed that the budget to encourage creation and sharing of knowledge among academics in the universities were limited.

#### **7.2.4 Knowledge Sharing Strategies Available in the Universities**

The third research question investigated university strategies that support knowledge sharing. The knowledge sharing model advocates for a favorable environment in the organisation to facilitate knowledge sharing (Connelly & Kelloway, 2003; Lin, 2006). The findings revealed that universities used different strategies for knowledge sharing that included among others information technology and subscriptions to online and printed journals. The universities also had in place internally published journals that helped academics to share knowledge with each other. A total of 15 journals were published in the four universities which facilitated knowledge sharing among academics. Radio and television were also used in some universities to disseminate and share knowledge. Other strategies that were used to share knowledge included Open Performance Review and Appraisals OPRAS (Ling *et al.*, 2009), use of Agriculture day by U2 to showcase intellectual activities; and U3 used the annual Mwalimu Nyerere Memorial Day to bring scholars from universities to share knowledge through presentations, debates and seminars.

The universities also collaborated with one another in knowledge to promote knowledge sharing (Sita *et al.*, 2012). The majority of librarians 25 (83.3%) observed that knowledge sharing was facilitated through the use technology (Moseti, 2015). Social networks amongst scholars were found to play a fundamental role in knowledge production and sharing. Generally, a majority of the respondents 150 (57.9 %,) either were satisfied or very satisfied with the strategies used by universities to promote knowledge sharing among academics. However, 38 (14.7%) of respondents were not satisfied with the strategies the universities used to promote knowledge amongst academics, while another 71(27.4%) were neutral.

#### **7.2.5 Leveraging Knowledge Assets in Teaching, Research and Consultancy**

The fourth research question sought to establish how academics leveraged knowledge assets in teaching, research and consultancy. The knowledge sharing model considers the individual as an important factor in knowledge sharing (Bulan & Sensuse, 2012). All 18 (100%) deans of faculties revealed that academics generated and shared explicit and tacit knowledge in teaching, research and consultancy. Furthermore, findings showed that 133 (50.9%) academics integrated explicit and tacit knowledge into their teaching and research; while 68

(26%) used knowledge to support curriculum development. The findings also revealed that majority of the academics leveraged knowledge asset for teaching 233 (89.3%) often or most often, 25 (9.6%) shared knowledge occasionally and 3, (1.1%) rarely shared knowledge for teaching purposes. The findings further indicated that the majority of respondents (179, 68.6%) either often or most often leveraged knowledge for research, on the other hand 67(25.6%) shared knowledge occasionally while 14 (5.4%) rarely shared knowledge and only one (0.4%) did not share knowledge for either teaching, research and consultancy purposes.

With regard to sharing information for consultancy purposes, just over one third of academics 97 (37%) shared knowledge either often or most often; 102 (39%) shared occasionally, 48 (19%) shared knowledge rarely and 13 (5%) did not share knowledge at all. The findings seem to suggest that sharing knowledge for consultancy purposes was of the lowest use compared to teaching and research. This findings concurred with similar studies in the literature reviewed (Fullwood *et al.*, 2013; Goh & Sandhu, 2013; Katambara, 2014; Martin & Marion, 2005).

#### **7.2.6 Attitudes of Academics to Share Knowledge**

The fifth research question sought to determine the attitudes, willingness and awareness of academics about knowledge sharing. The knowledge sharing model states that the individuals' attitude, willingness and awareness are important for sharing knowledge (Bulan & Sensuse, 2012; Fink & Gururajan, 2010; Noor & Salim, 2012; Yang, 2008).

Almost all of the academics 255 (97.7%) were either positive or very positive towards knowledge sharing with colleagues. One (0.4%) respondent had negative attitude and five (1.9%) were neutral. The majority of the academics shared knowledge mainly within their universities 259 (99.2%); 255, (97.7%) shared knowledge with students, while 162, (62.1%) shared knowledge with academics from other universities and a minority 37 (14.2%) shared knowledge with researchers and people in the community. The findings generally suggest that the majority of academics were aware of the knowledge sharing concept and they also appreciated the importance of knowledge sharing. Sandhu, Jain and Ahmad (2011) found that 97% of respondents in public sector in Malaysia were of the view that knowledge sharing was important for a success of the department as it facilitated competitive advantage.



### **7.2.7 Factors Influencing Knowledge Sharing Among Academics**

The sixth research question sought to establish the factors influencing knowledge sharing among academics. The knowledge sharing model presents three major factors that influence knowledge sharing: organisational, individual, and technological factors (Ismail & Yusof, 2008; Israilidis, *et al.*, 2015; Kwakye & Nor, 2011; Noor & Salim, 2012).

The findings confirm that organisational, individual and technology factors were influencing knowledge sharing. The respondents indicated that the organisational factors such as management support, incentives and rewards, organisational culture, motivation, and university policy influenced positively knowledge sharing. Similarly, individual factors comprising of personal expectation, individual attitude and trust also influenced knowledge sharing. In addition, Information Communication Technology (ICT) and Information Technology (IT) to facilitate knowledge sharing among academic staff. Similarly, Fari and Ocholla (2015) found that technology influenced knowledge sharing. Moseti (2015) found that efficient management and utilization of knowledge resources generated and accessed by the universities can only be achieved with the support of modern technology.

## **7.3 Conclusion**

The conclusions adduced in this section are on university organisational culture; universities' support for knowledge creation; knowledge sharing strategies available in the universities; leveraging knowledge assets in teaching, research and consultancy; attitudes and willingness of academics to share knowledge; and factors influencing knowledge sharing among academics.

### **7.3.1 University Organisational Culture**

The study showed that overall, university culture promoted knowledge sharing. The universities promoted a culture of knowledge sharing through workshops, research, seminars, publications, presentations, meetings, public lectures, forums, conferences, training, ICT, IT and colloquia.

The respondents, who did not agree that university culture promoted knowledge sharing, said that the university priority was teaching, others stated that financial limitations and lack of

government support affected knowledge sharing. The study concludes that though universities promoted knowledge sharing among academics, this was constrained by a number of factors that needed to be resolved including but not limited to necessary policy, funding, management support and knowledge management support structures.

### **7.3.2 Universities Support for Knowledge Creation and Sharing**

The findings revealed that the universities used library staff and offices of research and publications to facilitate knowledge creation and sharing. The literature reviewed highlighted the need for the university to have designated staff to deal with knowledge sharing (Jain, Sandhu & Sidhu, 2007). The findings revealed lack of acknowledge management and sharing policy to support knowledge generation, use and sharing. The universities seemed to rely on research and publications policy to guide knowledge creation and sharing.

The findings also revealed that nearly half of the academics surveyed (49.8 %) and all deans of faculties acknowledged that the universities provided incentives and rewards such as promotion, monetary rewards, appreciation such as certificates and letters of appreciation and training, while another 50.2% of respondents disagreed that the universities provided any rewards and incentives to facilitate knowledge sharing. It is concluded that though the universities were involved in generation of knowledge, this was hampered by the lack of designated staff for knowledge sharing, inadequate knowledge management support, absence of knowledge sharing policy and inadequate funding.

### **7.3.4 Knowledge Sharing Strategies Available in the Universities**

The findings revealed that the universities used different strategies to promote knowledge sharing that included technology and information systems; online and printed; radio and television; Open Performance Review and Appraisals OPRAS; Agriculture day; Mwalimu Nyerere Memorial Day and inter- university collaboration. However the strategies for knowledge sharing were affected to a certain extent by poor internet connectivity, and unreliable electricity supply.

The study concludes that diversity of knowledge strategies used by universities were appropriate to facilitating knowledge sharing among academics but the universities needed to

do more to make such strategies more effective for example by improving internet connectivity, addressing issues related to unreliable electricity, skills development and promoting intra and inter university collaboration.

### **7.3.5 Leveraging Knowledge Assets in Teaching, Research and Consultancy**

The study found that academics generated and shared explicit and tacit knowledge in teaching, research and consultancy. The academics also leveraged knowledge sharing to support curriculum development. It can be concluded that while the academics leveraged knowledge assets in the core business of teaching and research, the same was not evident in consultancy. Consultancy is an integral part of the university academic life and should equally be promoted through knowledge sharing. The knowledge is only functional when it is shared or acted upon, the academics should leverage knowledge teaching, research and consultancy.

### **7.3.6 Attitudes and Willingness of Academics Towards Sharing Knowledge**

The study found that most academics had a positive attitude toward knowledge sharing and they were willing to share knowledge. A majority of the academics shared knowledge mostly within their universities, with students and they also shared knowledge with academics from other universities and a minority shared knowledge with researchers and people in the broader community. The findings also revealed a majority of academics were aware of the importance of knowledge sharing. Therefore academics in Tanzanian universities can be said to appreciate the value of knowledge sharing.

### **7.3.7 Factors Influencing Knowledge Sharing Among Academics**

The findings confirmed that organisational, individual and technology factors influenced knowledge sharing. The organisational factors consist of management support, incentives and rewards, organisational culture, motivation, and policies on knowledge sharing. Individual factors comprises personal expectation, individual attitude towards knowledge sharing, trust among academics and personal interactions. Technology factors include ICT infrastructure, technology acceptance and use. The organisational, individual and technology factors are interdependent and must be harnessed by the universities to enhance knowledge sharing.

### **7.3.8 Study gap**

This study was exploratory and did not delve significantly into specificities of each individual university on knowledge sharing. It is expected that future will be able to illuminate the individual university demographics and how these affect knowledge sharing. The gender dimension that was not captured in this could be studied as are the various infrastructures and how they influence knowledge sharing.

## **7.4 Recommendations**

The study has discussed knowledge sharing among academics in selected universities in Tanzania. The researcher proposes recommendation on the following areas: top management support, strategies for promoting knowledge sharing, organisation structure, communication, and designated staff for knowledge sharing, policy framework, reward system, knowledge sharing strategies, information technology and mentorship.

### **7.4.1 Recommendation 1: Top Management Support**

The Universities' top management is encouraged to provide continuing support for knowledge sharing in the form of infrastructure development, skills development and transfer, policy and adequate funding. Abdillah (2014) suggests that the commitment from top management is fundamental to maintain the continuity of knowledge sharing in higher learning institutions.

### **7.4.2 Recommendation 2: Strategies for Promoting Knowledge Sharing**

The universities promoted knowledge sharing through workshops, research, seminars, publications, meetings, public lectures, forums, conferences, training and colloquial. The universities should provide more opportunities for knowledge sharing through inter university collaboration within and outside Tanzania to improve quality of scholarly engagement. Besides, more awareness should be created among academic staff of the various channels of sharing knowledge and how they can participate in them.

### **7.4.3 Recommendation 3: Organisation Structure**

The universities' organisational structure did not seem to have a cogent unit to promote knowledge sharing. While the directorate of research and publications is responsible for administering research and publications, the activities of knowledge sharing should reside in separate unit with its own staff and budget. Mueller (2014) suggests that the universities' should provide a structure that allows and supports individuals to interact without barriers in order to cultivate knowledge sharing. In providing good structure, Al-Alawi *et al* (2007) the university will amplify the level of participation of academics and reduce the boundaries between staff and organisation, to enable easier flow of information vertically.

### **7.4.4 Recommendation 4: Communication and Interaction**

The researcher recommends that the universities should improve communication channels through which academics can interact and share knowledge including and not limited to blogs, social media platforms, institutional repositories, university portals, etc. This would help horizontal and vertical communication and collaboration among academic staff to build trust which ultimately facilitates participation of academics in knowledge sharing.

### **7.4.5 Recommendation 5: Designated Staff for Knowledge Sharing.**

The study established that, the universities were using library staff and the office of research and publications to facilitate knowledge creation and sharing. As pointed out before universities should consider a separate unit and recruiting designated staff to oversee all activities related to knowledge sharing in universities. The literature reviewed highlighted the need for the university to have designated staff to deal with knowledge sharing (Jain, Sandhu & Sidhu, 2007). In addition, universities should consider implementing formal mentoring programs which can be conducted through internal training, short courses and workshops to enhance and build capacity for knowledge sharing. Yang (2008) advises that for the universities to be successful on knowledge sharing, various approaches including mentoring should be applied. Similarly, Gururajan and Fink (2010) recommend that mentoring of junior staff by older staff is needed to develop a new generation of academics to replace the so-called baby boomers nearing retirement.

#### **7.4.6 Recommendation 6: Policy Framework**

The findings revealed that the universities did not have in a place knowledge management and sharing policies to support knowledge generation, use and sharing. The universities should consider developing appropriate knowledge management policies to guide and enhance operational efficiency in knowledge sharing. Turyasingura (2011) recommends that, the universities should develop policies which guide, encourage, motivate and facilitate knowledge sharing among individuals. Jain, Sandhu and Sindhu (2007) suggest that the organisations should have a policy that guide knowledge creation and also recognize rewards to individuals as well as groups that share knowledge.

#### **7.4.7 Recommendation 7: Rewards System**

The universities should consider enhancing the current reward system for knowledge sharing by making provision for adequate budget for incentives and rewards to the academics that are participating in knowledge creation and sharing. Al-Alawi *et al* (2007) recommend effective rewards and incentives to support knowledge sharing behaviors. Sandhu, Jain and Ahmad (2011) recommend that rewards system can be planned in a way that encourages individuals to generate and share knowledge. Kim and Ju (2008) further recommend that “the universities establishing appropriate and satisfactory rewards systems would encourage and stimulate exchanging and sharing knowledge based on their resources”.

### **7.5 Contribution and Originality of the Study**

The literature reviewed showed that there are limited studies on knowledge sharing among academics specifically in universities in Tanzania but generally in Africa. The study contributes to the small but growing body of empirical research on knowledge sharing in universities in Tanzania and other parts of Africa.

The results revealed that universities in Tanzania lacked knowledge management and sharing policy and this situation hindered successful knowledge sharing practices. The study provides basis for the formulation of enabling policies to promote knowledge sharing in the universities.

The study also contributes to theory development because related studies that have been conducted in Tanzania such as (Dulle, Majanja, & Cloete (2010); Katambara (2014); Lwoga & Chilimo (2008); and Lwoga (2011) have not been informed by knowledge management theories to understand key issues affecting knowledge sharing. This study was underpinned by knowledge sharing model that revealed the influence of organisational, individual and technology factors as critical factors influencing knowledge sharing in the university environment in Tanzania.

This study contributes to knowledge sharing practices in Tanzanian universities, particularly developing countries that aspire to utilise the knowledge generated by academics in their universities which contributes to the universities' achievement as well as reducing cost of academic literature.

## **7.6 Suggestion for Further Research**

The current study investigated the knowledge sharing practices among academics in selected universities in Tanzania. The study was conducted at four universities of which two were public and two were private universities. Tanzania has 33 full-fledged universities (TCU, 2016) and similar studies are recommended in other universities in order to have a holistic picture of knowledge sharing practices among academics in universities in Tanzania.

The literature reviewed showed that academics shared knowledge they generated through research, however the impact of such knowledge generated is not known. The researcher therefore suggests that a comprehensive study be conducted on the impact of the knowledge shared by academics in the universities in Tanzania.

The literature reviewed indicated that trust is one of the key individual factors influencing academics' behavior in knowledge sharing. The extent to which trust influences knowledge sharing in the context of Tanzanian universities would illuminate more on the individual factors influencing knowledge sharing. Premised on the above a thorough study should be conducted on how trust influences knowledge sharing.





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## APPENDICES

### Appendix 1: Questionnaire for Academics Staff

Dear respondent,

I am a PhD student in the information studies programme at the University of KwaZulu-Natal, Pietermaritzburg campus in South Africa. I am conducting a study on **knowledge sharing among academics in selected universities in Tanzania**. I am inviting you to kindly answer the following questions for my research project, as part of the requirements for the fulfilment of the doctoral degree in information studies. Any information provided here will remain confidential and you will remain anonymous. Your cooperation will be greatly appreciated.

Please kindly fill in the blank spaces provided or tick the appropriate box against each question.

1. Name of your university.....

2. Your highest level of education

☐ Degree

☐ Masters

☐ PhD

3. Are you sharing your knowledge with others?

☐ Yes

☐ No

(i) If your answer to question 3 is **YES**, how often do you share your knowledge?

☐ Most often

☐ Often

☐ Occasionally

☐ Rarely

☐ Not at all



(ii) If your answer to question 3 is NO, please explain why

.....  
.....

4. With whom are you sharing knowledge (please tick)

Academic staff within your university	
Academic staff from other universities	
Students	
Others	

5. What type of knowledge are you sharing?

[    ] Tacit knowledge

[    ] Explicit knowledge

6. How often do you share knowledge with your colleagues on: (please rate)

	Most often	Often	Occasionally	Rarely	Not at all
Teaching					
Research					
Consultancy					

7. Does your university culture promote knowledge sharing among academics?

[    ] Yes

[    ] No

[    ] I don't know

(i) If your answer to question 7 is YES please explain how you believe university culture promoted knowledge sharing.....

.....

- (ii) If your answer to question 7 is **NO** give the reasons why you believe your university Culture do not promote knowledge sharing.....  
 .....

8. To what extent are you aware of the following (Please rate)

	A very great extent	A great extent	A moderate extent	A Small extent	To no extent
Knowledge management					
Knowledge sharing					

9. Is your university involved in knowledge creation and sharing?

- [    ] Yes  
 [    ] No  
 [    ] I don't know

- (i) If your answer to question 9 is **YES** please explain how.....  
 .....

- (ii) If your answer to question 9 is **NO** what are the reasons? .....  
 .....

10. Does the university have staff responsible for spearheading knowledge sharing?

- [    ] Yes  
 [    ] No  
 [    ] I don't know

11. Does the University have a knowledge management and sharing policy?

- [    ] Yes  
 [    ] No  
 [    ] I don't know

If the answer to question 11 is **NO**, does the university have any future plan to formulate a knowledge management and sharing policy?

- ☐ Yes
- ☐ No
- ☐ I don't know

12. What knowledge sharing strategies exist in your University?.....

.....

.....

.....

13. Are you satisfied with the knowledge management and sharing strategies in your University?

- ☐ Very satisfied
- ☐ Satisfied
- ☐ Neither satisfied nor dissatisfied
- ☐ Dissatisfied
- ☐ Very dissatisfied

14. Does the University provide incentives or rewards to the academics when they share their knowledge?

- ☐ Yes
- ☐ No
- ☐ I don't know

(i) If your answer to question 14 is **YES** please, mention the types of incentives

/reward provided.....

.....

.....

(ii) If your answer to question 14 is **NO** explain why.....

.....

.....

.....

.....

15. Does the university have Information System to support Knowledge sharing?

☐ Yes

☐ No

☐ I don't know

16. Please explain how you leverage knowledge assets in your teaching, research and consultancy?

.....

.....

.....

.....

17. What is your attitude towards knowledge sharing?

☐ Very positive

☐ Positive

☐ Neutral

☐ Negative

☐ Very negative

18. Do you willingly share your knowledge with others

☐ Yes

☐ No

19. What factors influence knowledge sharing among academics in your universities?

(please tick them)

Management support	
Rewards	
Organisational culture	
Motivation	
Information technology	
Personal expectation	
Individual attitudes towards knowledge sharing	
University policy on knowledge sharing	
Incentive	
Trust among academics	
Personal interactions	

20. Please briefly explain the importance of knowledge sharing in your university

.....  
 .....  
 .....

21. Please briefly explain what can be done to improve knowledge sharing among academics in universities in Tanzania?

.....  
 .....  
 .....  
 .....

## Appendix 2: Interview Guide for Librarians

Dear respondent,

I am a PhD student in the information studies programme at the University of KwaZulu-Natal, Pietermaritzburg campus in South Africa. I am conducting a study on **knowledge sharing among academics in selected universities in Tanzania**. I am kindly inviting you to respond to the following questions for my research project, as part of the requirements for the fulfillment of the doctoral degree in information studies. Any information provided here will remain confidential and you will remain anonymous. Your cooperation will be greatly appreciated.

1. Name of the  
university.....
2. Your highest academic  
qualification.....
3. How does your organisational culture promote knowledge sharing?
4. How do you manage knowledge created in your university?
5. What facilities are available to facilitate knowledge management and sharing?
6. What knowledge management and sharing strategies exist in your university?
7. What factors in your opinion influence knowledge sharing among academics in  
Tanzanian universities?
8. How does the library facilitate sharing of knowledge among academics?
9. What in your opinion is the attitude of academics towards knowledge sharing?
10. What can be done to improve knowledge sharing among academics in universities  
in Tanzania?

**THANK YOU FOR YOUR TIME AND COOPERATIO**

### Appendix 3: Interview Guide for Deans of Faculties

Dear respondent,

I am a PhD student in the information studies programme at the University of KwaZulu-Natal, Pietermaritzburg campus in South Africa. I am conducting a study on **knowledge sharing among academics in selected universities Tanzania**. I am inviting you to respond to the following questions as part of requirements for fulfillment for the award of doctoral degree in information studies. Any information provided here will remain confidential and you will remain anonymous. Your cooperation will be greatly appreciated.

1. Name of the university.....
2. Name of faculty:.....
3. Highest level of education .....
4. What types of knowledge is generated and shared among academics? (tacit or explicit) or both?
5. What organisational structures are in place to promote knowledge sharing among academics?
6. Are the academics willing to share knowledge?
7. How do you support knowledge creation and sharing in your University?
  - (i) Do you have staff designated for spearheading KS?
8. What facilities are available to promote knowledge management and sharing?
9. What policies exist to enhance knowledge sharing?
10. What budgetary provisions are made to facilitate knowledge sharing?
11. What strategies exist in your University to promote knowledge sharing?
12. How are academics motivated to share knowledge?
13. Does the university encourage research, consultancy and publications?
14. Does the university culture promote knowledge sharing? How do you support/  
promote culture of knowledge sharing
15. What can be done to improve knowledge sharing among academics in universities in Tanzania?

**THANK YOU FOR YOUR TIME AND COOPERATION**

## Appendix 4: Ethical Clearance



29 September 2015

Mr Zakayo Bernard 213573372  
School of Social Sciences  
Pietermaritzburg Campus

Dear Mr Bernard

Protocol reference number: HSS/0979/015D

Project title: Knowledge sharing among academics in selected universities in Tanzania

### Full Approval – Expedited Application

In response to your application received on 23 July 2015, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol have been granted **FULL APPROVAL**.

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

**PLEASE NOTE:** Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

.....  
Dr Shenuka Singh (Chair)  
Humanities & Social Sciences Research Ethics Committee

/pm

Cc Supervisor: Prof Stephen M. Mutula  
Cc Academic Leader Research: Professor Sabine Marschall  
Cc School Administrator: Ms Nancy Mudau



## Appendix 5: Informed Consent Letter



University of KwaZulu-Natal  
School of Social Sciences  
Private Bag X01  
Scottsville, 3209  
South Africa  
Telephone : +27(0) 332605320/5007  
Fax : +27(0) 332605092  
Email: [social\\_sciences@ukzn.ac.za](mailto:social_sciences@ukzn.ac.za)

29 October 2014

Dear Respondent

### Informed Consent Letter

**Researcher:** Zakayo Bernard  
Institution; University of KwaZulu-Natal  
Telephone number: 031 260 4373  
Email address: [maigazakayo@gmail.com](mailto:maigazakayo@gmail.com)

**Supervisor:** Prof Stephen M. Mutula  
Institution: University of KwaZulu-Natal  
Telephone number: 033-260 5571  
Email address: [mutulas@ukzn.ac.za](mailto:mutulas@ukzn.ac.za)

I, Zakayo Bernard, of University of Kwazulu Natal, kindly invite you to participate in the research project entitled **Knowledge sharing among academics in selected universities in Tanzania**

This research project is undertaken as part of the requirements of the PhD, which is undertaken through the University of KwaZulu-Natal, Information Studies Department.

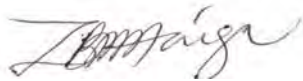
The aim of this study is to investigate the status of knowledge sharing among academics in selected universities in Tanzania

Participation in this research project is voluntary. You may refuse to participate or withdraw from the research project at any stage and for any reason without any form of disadvantage. There will be no monetary gain from participating in this research project. Confidentiality and anonymity of records identifying you as a participant will be maintained by the Department of Information Studies, at the University of KwaZulu-Natal.

If you have any questions or concerns about participating in this study, please feel free to contact myself or my supervisor at the numbers indicated above.

It should take you about 15 minutes to complete the questionnaire.

Thank you for participating in this research project.



-----  
Signature

29 October 2014

-----  
Date

I ..... hereby consent to participate in the above study.

Name: ..... Date: ..... Signature: .....

**Supervisor's details**

**Student's details**

## Appendix 6: Request to Undertake Research St Augustine University of Tanzania



The Vice Chancellor  
St Augustine University of Tanzania  
Box 307  
Mwanza  
Tanzania

RE: Introducing Mr Zakayo Bernard – PhD Student at University of KwaZulu Natal

This letter serves to introduce and confirm that Mr Zakayo Bernard is a duly registered PhD (Information Studies) candidate at the University of KwaZulu Natal. The title of his PhD research is **Knowledge sharing among academics in selected universities in Tanzania**

The outcome from the study is expected to improve practice, inform policy and extend theory in this field of study. As part of the requirements for the award of a PhD degree he is expected to undertake original research in an environment and place of his choice. The UKZN ethical compliance regulations require him to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Mr Zakayo Bernard permission to carry out research in your University. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof Stephen Mutula (Information Studies Programme)  
Supervisor and Academic Leader, Development Cluster

University of KwaZulu Natal  
Private Bag X01 Scottsville 3209  
Pietermaritzburg  
Email: [mutulas@ukzn.ac.za](mailto:mutulas@ukzn.ac.za)  
Tel: +27 33 260 5571; +27 712 750 109

## Appendix 7: Authorization Letter- St. Augustine University of Tanzania

ST. AUGUSTINE UNIVERSITY OF TANZANIA  
P.O. BOX 307,  
MWANZA, TANZANIA



24/04/2015

SAUT/STA/PF/131/82

Dean & Head: School of Social Sciences  
University of KwaZulu Natal  
Private Bag X01 Scottsville 3209  
Pietermaritzburg  
SOUTH AFRICA

**RE: ACCEPTANCE TO UNDERTAKE PhD RESEARCH AT SAUT**

Please refer to your letter dated 27 March 2015 regarding the above mentioned subject.

We wish to inform you that your request has been accepted. Mr. Zakayo is welcome to undertake Original Research for Information Studies as you requested.

Thanking you for your cooperation.

Yours faithfully,

A handwritten signature in dark ink, appearing to read "Fr. Cleophase Mabula".

**Fr. Cleophase Mabula**

Ag. Deputy Vice Chancellor for Administration and Finance



c.c. Zakayo Bernard  
University of KwaZulu Natal  
South Africa

Tel: 255-282552725; 2550560; 2550090; Fax: 255-28-2550167  
Email: sautmalmbe@yahoo.com; website: www.saut.ac.tz

## Appendix 8: Request to Undertake Research- Sokoine University of Agriculture



The Vice Chancellor  
Sokoine University of Agriculture  
Box 3000  
Morogoro  
Tanzania

### RE: Introducing Mr Zakayo Bernard – PhD Student at University of KwaZulu Natal

This letter serves to introduce and confirm that Mr Zakayo Bernard is a duly registered PhD (Information Studies) candidate at the University of KwaZulu Natal. The title of his PhD research is **Knowledge sharing among academics in selected universities in Tanzania**

The outcome from the study is expected to improve practice, inform policy and extend theory in this field of study. As part of the requirements for the award of a PhD degree he is expected to undertake original research in an environment and place of his choice. The UKZN ethical compliance regulations require him to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Mr Zakayo Bernard permission to carry out research in your University. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof Stephen Mutula (Information Studies Programme)

Supervisor and Academic Leader, Development Cluster

University of KwaZulu Natal  
Private Bag X01 Scottsville 3209  
Pietermaritzburg  
Email: [mutulas@ukzn.ac.za](mailto:mutulas@ukzn.ac.za)  
Tel: +27 33 260 5571; +27 712 750 109

## Appendix 9: Authorization Letter- Sokoine University of Agriculture

### SOKOINE UNIVERSITY OF AGRICULTURE



OFFICE OF THE DEPUTY VICE CHANCELLOR

(ADMINISTRATION AND FINANCE)

P.O. BOX 3000, CHUO KIKUU, MOROGORO, TANZANIA

TELEPHONE: +255 023 260 3511-4, Direct +255 023 260 4653,

FAX: +255 023 260 4573.

E-mail : [dvcadminfin@suanet.ac.tz](mailto:dvcadminfin@suanet.ac.tz)

Ref. No. SUA/ADM/R.1/8

Date: 27<sup>th</sup> April, 2015

Dean & Head: School of Social Sciences  
University of KwaZulu Natal  
Private Bag X01 Scottsville 3209  
Pietermaritzburg  
Email: [mutulas@ukzn.ac.za](mailto:mutulas@ukzn.ac.za)  
Te: +27 33 260 5571; +27 712 750 109

Re: **Introducing Mr. Zakayo Bernard – PhD Student at University of KwaZulu Natal**

Reference is made from your letter dated 27<sup>th</sup> March, 2015 regarding the heading above.

Please be informed that permission is granted to enable **Mr. Zakayo Bernard** who is a bonafide student at your University and a PhD student to undertake research activities here at SUA.

Upon arrival Mr. Zakayo Bernard may contact the Principal Training Officer.

Yours Sincerely,

G.H. Mhagama

for: **DEPUTY VICE CHANCELLOR**  
**(ADMINISTRATION AND FINANCE)**

cc: Mr. Zakayo Bernard – PhD Student

## Appendix 10: Request to Undertake Research- Mzumbe University



The Vice Chancellor  
Mzumbe University  
Box 1  
Morogoro  
Tanzania

### RE: Introducing Mr Zakayo Bernard – PhD Student at University of KwaZulu Natal

This letter serves to introduce and confirm that Mr Zakayo Bernard is a duly registered PhD (Information Studies) candidate at the University of KwaZulu Natal. The title of his PhD research is **Knowledge sharing among academics in selected universities in Tanzania**

The outcome from the study is expected to improve practice, inform policy and extent theory in this field of study. As part of the requirements for the award of a PhD degree he is expected to undertake original research in an environment and place of his choice. The UKZN ethical compliance regulations require him to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Mr Zakayo Bernard permission to carry out research in your University. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding

Prof Stephen Mutula (Information Studies Programme)

Supervisor and Academic Leader, Development Cluster

University of KwaZulu Natal  
Private Bag X01 Scottsville 3209  
Pietermaritzburg  
Email: [mutulas@ukzn.ac.za](mailto:mutulas@ukzn.ac.za)  
Tel: +27 33 260 5571; +27 712 750

## Appendix 11: Authorization Letter-Muzumbe University

### MZUMBE UNIVERSITY



### OFFICE OF THE VICE CHANCELLOR

Tel: +255 (0) 23 2604380/1/3/4

P.O.BOX 63

Fax: +255 (0) 23 2604382 **MZUMBE**

Cell: +255 (0) 754694029 **MOROGORO, TANZANIA**

E-mail:

drps@mzumbe.ac.tz

z Website:

www.mzumbe.ac.tz

Ref.No. MU/R.2/1/VOL.II/54 Date: 04<sup>th</sup> May, 2015

University of KwaZulu  
Natal, Private Bag X01  
Scottsville 3209,  
Pietermaritzburg,  
South Africa.

#### Re: INTRODUCTION OF MR. ZAKAYO BENARD

*The caption above refers.*

*This letter is in response to yours dated 27<sup>th</sup> March, 2015 in which you were introducing the PhD candidate mentioned in the caption above.*

*We hereby acknowledge receiving your letter (mentioned above) and am glad to inform you that we have accepted to grant Mr. Zakayo permission to carry out his research at our university. However, when he arrives at our university for his research he should report to the office of the Director, in the Directorate of Research, Publications and Postgraduate Studies for logistical issues.*

*We trust that he will find conducting his research at our university an enjoyable endeavor and we look forward to seeing MR. Zakayo at our University soon.*

*Sincerely yours,*



Dr. Fred Alfred (PhD)

**For: VICE CHANCELLOR**



## Appendix 12: Request to Undertake Research- University of Iringa



The Vice Chancellor  
University of Iringa  
Box 200  
Iringa  
Tanzania

### RE: Introducing Mr Zakayo Bernard – PhD Student at University of KwaZulu Natal

This letter serves to introduce and confirm that Mr Zakayo Bernard is a duly registered PhD (Information Studies) candidate at the University of KwaZulu Natal. The title of his PhD research is **Knowledge sharing among academics in selected universities in Tanzania**

The outcome from the study is expected to improve practice, inform policy and extend theory in this field of study. As part of the requirements for the award of a PhD degree he is expected to undertake original research in an environment and place of his choice. The UKZN ethical compliance regulations require him to provide proof that the relevant authority where the research is to be undertaken has given approval.

We appreciate your support and understanding to grant Mr Zakayo Bernard permission to carry out research in your University. Should you need any further clarification, do not hesitate to contact me.

Thank you in advance for your understanding


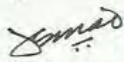

Prof Stephen Mutula (Information Studies Programme)

Supervisor and Academic Leader, Development Cluster

University of KwaZulu Natal  
Private Bag X01 Scottsville 3209  
Pietermaritzburg  
Email: [mutulas@ukzn.ac.za](mailto:mutulas@ukzn.ac.za)  
Tel: +27 33 260 5571; +27 712 750 109



## Appendix 13: Authorization Letter- University of Iringa

	<b>UNIVERSITY OF IRINGA (UoI)</b> <b>CHUO KIKUU CHA IRINGA</b>	
	OFFICE OF THE VICE CHANCELLOR (Formerly, Tumaini University, Iringa University College) P. O. Box 200 Iringa, Tanzania, East Africa Tel: (0) 26 272-0900 Fax: (0) 26 272-0904 E-mail: <a href="mailto:juco@tumaini.ac.tz">juco@tumaini.ac.tz</a> Website: <a href="http://www.tumaini.ac.tz">www.tumaini.ac.tz</a>	
	Ref. No: UoI/R.2/2015/1	8 May, 2015
<p>Dean &amp; Head: School of Social Sciences University of KwaZulu Natal Private Bag x01 Scottville 3209 Pietermaritzburg.</p> <p>Dear Sir,</p> <p><b>RE: RESEARCH PERMIT FOR MR. ZAKAYO BERNARD</b></p> <p>Your letter of 27 March, 2015, introducing Mr. Zakayo Bernard as your Ph.D student who wants to carry out research at our University of Iringa on "Knowledge Sharing among Academics in Selected Universities in Tanzania", refers.</p> <p>The purpose of this letter is to candidly grant Mr. Zakayo Bernard that permission.</p> <p>Sincerely,</p> <div style="display: flex; align-items: center;"><div style="flex: 1;"> ..... Prof. J.S. Madumulla Vice Chancellor</div><div style="flex: 1; text-align: center;"></div></div> <p>Cc: 1. DVC – Academic Affairs 2. DVC – Resource Management 3. Director – Postgraduate Studies &amp; RP</p>		
<p>P.O. Box 200 Iringa, Tanzania East Africa</p> <p>Tel: (0) 26 272-0900</p> <p>Fax: (0) 26 272-0904</p> <p>E-mail: <a href="mailto:juco@tumaini.ac.tz">juco@tumaini.ac.tz</a></p> <p>Website: <a href="http://www.tumaini.ac.tz">www.tumaini.ac.tz</a></p>	<p><b>University Council:</b> Rt. Rev. Dr. Oudenburg M. Mdegella, Chairperson Prof. Joseph Parsalaw Dr. Rebecca Sima Dr. Basil Saprapasen Prof. Gwakisa Mwakagali Ms. Sara Masengo Mr. Wilson Ntulo</p> <p>Bishop Isaya Mungele Prof. David Ngasapa Prof. Joshua S. Madumulla, VC President, UISO - UoI Mr. Neyman Chavala Ms. Blandina Nyoni Secretary-Legal Officer</p> <p>Prof. Joseph Kuzilwa Prof. Wilford S. Abel Mr. Martin Mkuye Dr. Iur Gracieux Mbuzakongira - DVCAA Dr. Given Msomba, DVCRM Ms. Joyce Msolla</p>	

## Appendix 14: Map of Tanzania and Study Sites

